The Builder.

VOL. XXI.—No. 1087.

"Going Along." More of Venice.

ORE? Ay, much more if we had but our own will to consult. Venice is a place to talk of for ever, and would be a place to live in, too, if Italy had but its own again, and the Venetians, relieved from thraldom and made easy in their minds, would set themselves to cleanse the canals and pass such laws as would prevent the autumnal foulness and consequent evil smells and sickness. Art and science are under a dead weight here. Take that off and they will spring up rejuvenescent to emulate their own achievements in earlier times. Glorious sons had Venice in those days; equally glorious descendants may she have again, if fair play be given her. Her best children, ill developed, now run away from her as fast as opportunities occur, and settle where they may use their abilities with something like freedom, and obtain a proper reward for their labours.

The exhibition of modern works open at the *Accademia di Belle Arti* afforded an illustration of this. The works of the students showed good academic drilling, considerable power,—so far: but the after-results of such drilling were wanting in the rooms below, where were collected the works sent by the elder men for exhibition. These, for the most part, were weak and feeble; and for such as had merit it was complained there were no buyers. The works for sale were 139 in number, including a few busts, vases, models, and copies. Two or three landscapes by Luigi Querena, Giuseppe Holzer, and Professor F. Moja, and half a dozen *genre* pictures by Guglielmo Stella, Cesare dell' Acqua, and Giulio Carlini, were all that called for praise. Some remarkably fine copies by Prodocomi of the illuminations in the Grimani breviary, however, placed in another part of the structure, should not pass unnoticed.

Seen in connexion with the fine works, especially of the Venetian school, to be found in the building and open to the public every day, these modern efforts seemed puny indeed. The Venetians claim to have had an academy as far back as 1670; but the academy on its present footing, and the present collections there, do not date farther back than 1807. In connexion with the original building, we get the name of Palladio, and with the later arrangement that of Cicognara, whose large work on Venice all our readers ought to know. The collections are several in number; the Pinacoteca dell' Accademia, the Pinacoteca Contarini, and the Pinacoteca Renier; and these being kept distinct, order and sequence in the arrangement of the pictures are sacrificed. The chief glory of the collections is the Assumption, signed *Ticianus*, a grand and wonderful work. Speaking of this picture, Mrs. Jameson once said to us the effect of it on her was "like music;" but this was not full praise. Never can music give the precise expression and evoke the same amount of feeling this picture is capable of doing. Browning sings:—

> "There is a vision in the heart of each,
> Of justice, mercy, wisdom, tenderness
> To wrong and pain, and knowledge of their cure;
> And these embodied in a woman's form,
> That best transmits them pure as first received
> From God above her to mankind below!"

This picture gives expression to the dream of many.

Of the same great master there are the earliest work, the Visitation of Elizabeth, and his last when he was an old, old man, the Deposition of Christ, finished by the elder Palma. These are very interesting as matters of history, but as it seems to us, only in that point of view. Lovers of Tintoretto may revel here: and amongst many fine canvasses by Paulo Veronese is his large work, the Supper in the House of Levi, more than 40 feet long and about 20 feet in height, one of the grand series of Scriptural banqueting scenes painted by him, and now scattered over Europe. There are several large pictures by Vittore Carpaccio, full of small figures, illustrating the life of St. Ursula, that deserve notice. In one, a prince of England (?) who has asked her in marriage of her father, il re Mauro, is kneeling, dressed in red damask; his face and hands are admirably painted. Some exquisite Madonnas by Gian Bellini; a picture by Antonella da Messina, who learned from Van Eyck the secret of the use of oil colours, and *from* whom, according to a story we do *not* believe, Gian Bellini stole it; two curious costume pictures by Gentile Bellini and works by Martin da Udine, Paolo di Credi, Giorgione, Bonifacio, Vicentino, and others, are amongst the riches and curiosities of the collection. In one room is preserved the good right-hand of Canova, his chisel being suspended from the wall above it, and in every apartment there is something that will detain the real lover of art.

On the same side of the canal with the Academy, stands the church of Santa Maria della Salute, built as if to form a picture, with the Dogana and its gilded globe, borne by Atlas, and the church of S. Giorgio Maggiore, for Venice to look at, and all artists to paint. The church of Santa Maria, a bold octagon, designed by B. Longhena, was built by direction of the Senate, in thankfulness that the plague had ceased;—"*Unde Origo, unde Salus*, 1631." It stands like the rest of Venice, on thousands of piles, driven in to form a bottom for it. A marble group at the high altar represents Venice praying to be relieved from the pest, which an angel is chasing away; St. Mark and St. Lorenzo take part. The octagon nave, round which an aisle continues, has a marble pavement; and there are some fine paintings in the church by Titian and other masters. Here lie the remains of the architect Sansovino. The exterior of S. Giorgio Maggiore, nearly opposite to the Ducal Palace, one of Palladio's most celebrated churches, cannot be called handsome. The interior, though the upper part is bare and poor, is much finer. The proportions are admirable, and the manner in which the ancient forms are adapted to modern wants, is skilful in the highest degree. Pictures by Tintoretto and others, and bronzes by Giroloma Campagna, call for admiration. The wood-carvings behind the high altar, by Alberto de Brule, 1598, though much praised, are simply good upholstery work.

The finest Gothic church in Venice, excepting the Frari, is that dedicated to SS. Giovanni e Paolo, ascribed to one of the Pisani, and which is now being restored under the architect, Signor Biondetti, with marble and terra cotta. There are some very bad settlements in the north transept, and the columns are driven over at the top. The chapels at the east end also need and are having attention. There are some curious bronze reliefs by Maza, of Bologna, fixed against the wall of a chapel at the east end. These illustrate the life of St. Dominic. The monument of the Doge Andrea Vendramini, 1478, is a remarkably beautiful specimen of *quattro-cento* enrichment. The figures are not so fine, though some of them are good. The church contains a wonderful assemblage of monuments of both the Pointed and the Renaissance period, including numerous statues. And as to the pictures there, we need only mention St. Peter Martyr, by Titian, and a fine Madonna and Saints, by Gian Bellini, to show that it is a shrine for all art-loving pilgrims. The Chapel of the Rosary has some wood-carving, coarse, but in parts powerful, by Brustolo. Everywhere in Italy, by the way, the artist's name is prominent on his work. In this chapel, too, there is a series of groups in relief illustrating the life of the Virgin, signed Aloysius Fagliapietra, or by his son Charles (with the exception of three), and of great beauty. The exceptions are much less good, and of these only we were sorry to find an artist making careful drawings for one of our compatriots,—a man of Manchester. What could have regulated the selection?

The Civil Hospital, near this church, is part of a richly adorned fifteenth century building, by Martino Lombardo, a member of a family of architects belonging to Venice. One of them, Sante Lombardo, designed the Scuola di San Rocco, with its fine staircase, of which we have already talked. He also built the beautiful Vendramini Palace, and others. The façade of the hospital has a spotty effect, from the variety of material used, coloured marbles and so forth being differently affected by time. The upper part shows considerable invention. Below, there is a curious imitation in marble of piers and arches in perspective, with lions and figures under them,—a horribly poor conceit.

Venice is a wonderful place for the study of domestic architecture. Some other cities have each a dozen or a couple of dozen of good specimens; but here the whole of the watery road is lined with them,—Byzantine, Gothic, and of the Renaissance,—mostly in a neglected state, many of them miserably out of repair, but all sufficiently perfect to show their peculiarities and their beauties. One noticeable and disappointing fact is the constant repetition made in the earlier Venetian buildings of a morsel of the well-known arcade of the Doge's palace. This occurs over and over again, a little varied in one or two instances, but for the most part simple repetition. Our own "Venetian Gothic" men, we must observe, find it very difficult to put together a façade without it. The balconies, the angle windows, little bits here and there in every direction, offer themselves for admiration, but are all now so well known as to need no introduction. Touching the Ducal Palace, by the way, we would relieve some of our general readers from a prevalent belief that they are bound to admire every stone of it. The top story has little about it to call for admiration; it must surely have been the work of a later hand, and as to the Strawberry Hill parapet that crowns it, visitors may be held excused if they say it is a very trumpery affair, quite unworthy of the greater part of the two lower stories of the building, the beauty and nobleness of which will be evident to all who have learnt to see.

And now, first taking another long look at the glorious *ensemble* here, turn the gondola up one of the narrow cuts that open out on the other side of the city, and pay a visit to the island of Murano.

At a very early date, the manufacture of glass it will be remembered, was specially cultivated by the Government of Venice. It was an art it

regarded as the apple of its eye (*"qual pupilla degli occhi suoi"*); and the products were purchased in all parts of the world, and brought in large revenues. In the thirteenth century the number of glass houses in Venice was so great that the city was constantly exposed to the danger of fires; and in 1291 a decree was passed ordering their demolition. Murano was chosen for their new site: in a short time the island was covered with glass-houses, and here the manufacture was carried on for long years. The glass-makers were invested with great privileges, and to some extent ennobled. Their glass-jewelry, coloured beads, enamelled vases, and filagree ornaments, were sought for by all Europe for some hundreds of years. In the eighteenth century, however, the trade took a new course, the glass of other countries came into fashion, and when the Venetian Republic fell, Murano lost its place, and has not regained it. Sadly desolate is it now, and its churches strikingly exhibit the decay. The cathedral, or Church of San Donato,—a well-known and very interesting building, dating probably from the eleventh century,—is in a miserable state; so bad, indeed, that the interior has been filled with scaffolding, and men have been set to work to repair it. Originally it must have been richly ornamented within and without. The eastern apse, arcaded externally, has lost its facing of stone and marble. The bare brickwork remains exposed, with small pieces of early carved stonework, birds and grapes, and interlacings here and there. The apse within is covered with mosaics, presenting on a gold ground a long figure of the Virgin, of Byzantine type, with blue dress, all cut into and spoilt. Behind the altar there is a carved representation of the patron, with the inscription, *"Corpus Sancti Donati Epi. Muriani protectoris."* The mosaic pavements in the church are most interesting. The patterns include the conventional two peacocks, eating out of a vase, and it is dated 1140. This work is second only to that in St. Mark's, and, in some respects, is perhaps superior to it. It has been miserably damaged; but time has not paled it so much as it has some of our modern mosaic pavements not twenty years old.

The church of S. Pietro, not far from the cathedral, is the picture of desolation. There are some clever wood-carvings in the sacristy, by Pietro Murano, in a very bad condition, and evidently little cared for, as a nail is driven into one of the figures to hang a towel on!

The Island of Torcello is farther off: the journey to it from Venice occupies the gondoliers nearly two hours. Passing up a little inlet of the island, through gardens of vines and shining pomegranates, the parent Basilica of Venice is soon found, a building more time-bleached, solitary, and deserted than that of Murano, or than any we can elsewhere remember. Pause awhile to view its singularly beautiful arcade at the west end, then enter the building again to experience a strange and absorbing sense of solitude. There is plenty to admire, nevertheless. Anything more exquisite than the series of capitals to the internal arcade of this building, it is almost impossible to conceive. But all other feelings at Torcello sink into one of melancholy at the sight of its noble mosaic at the west end. This invaluable example of early work, a "Last Judgment," is now literally bulging and crumbling from its wall—not from any inherent decay, but from the criminal apathy of the Austrian Government. It appears, that some four years since a mosaicist was commanded to restore the work—a process which he understood, as restorers are wont, to be best accomplished by ripping off the old mosaic by wholesale, and substituting his modern antique in its place. The result was, as may be guessed, impending ruin of perhaps the whole. But the Government, discovering that the process was taking a felonious form, since the ancient work, sound as well as time-worn, was being purloined, stopped the business, and, we believe, incarcerated the artist. From that day to this the mosaic has remained untouched. There stands the mosaicist's scaffold, and some of his tools, just as he left them. Unfortunately, too, the mosaic itself is as he left it—that is, bulging, tattered, falling, and threatening destruction. The absence of further care in the matter by those in authority is ascribed to the absorption of the Government money in gigantic military expenses. Thus the Government takes care that Venice shall be overrun with what the Venetians call the real mosquitoes of the place, and declines to spend a few pounds for the conservation of one of its most interesting monuments.

Poor Venice! Beautiful Venice!!

ARCHITECTURE AND THE ROYAL ACADEMY.*

The questions belonging to architecture, raised during the proceedings of the Commission on the Royal Academy, but some of them so strangely left unnoticed in the Report, concern too nearly the interests of the public, as well as tastes of the profession, to be dismissed by us in a single article. The Commission attribute that "bad taste and utter want of system" in public buildings, of which, as we have said, they recognize that there has been *"well-founded* complaint," to the dependance "too much on the rapid succession of the several politicians who have filled the office of First Commissioner of Public Works, and on the conflicting votes, which according to their recommendations, have been passed by the House of Commons." And they think that the Royal Academy, constituted as they propose,—namely, of fifty professional and ten non-professional Academicians, and fifty Associates, members jointly with the Academicians of the general assembly, the whole presided over by the best man of the Academicians, *professional*, it would appear, and of whichsoever branch of art,—would form "a valuable permanent council of advice and reference in all matters relating to the fine arts, public monuments and buildings," whilst that the successive advisers of the crown, instead of feeling jealousy, would welcome the advice with pleasure as relieving them from embarrassment. We may infer that the new constitution would admit of about eight architect-academicians. There are now three: but there is an architect associate; and at the date of the list which is given as "Appendix No. 4," the late Mr. Cockerell additionally was an "honorary retired Academician."

But though, on the actual management of public works, the Commission express an opinion which has our complete adhesion, we are not satisfied with their utter neglect, in their Report, of the question of the recruitment of the talent upon the existence of which, in the profession, the growth and future maintenance of an art-element in the works would depend, no less than upon the happy selection of a small number of the body of judges, qualified in their special pursuit, and competent to explain their views to the painters, sculptors, and amateurs who would form the majority. Taking the general *status* of education and talent in the profession as not likely to fall below the present standard, it must not be forgotten, that many of the defects of the *system*, or "want of system," before mentioned, are observable in ill-digested plans, and in the extravagance resulting from changes of intention, and pulling down and rebuilding, rather than immediately, in matters of art of which painters and sculptors could be cognizant. The errors are the means of wasting large sums that might otherwise be spent on art; and, under a proper system, not a street should be formed, or bridge built, or building erected, without the recognition of art as a requisite in the work. But we are inclined to think that our own profession,—could the public be suffused with a sense of the importance of the art-element in all buildings, and could the profession when so favoured, acquire the appreciation and capability for sculpture, or sculpture and painting,—would offer, or representatives of it, advice that would tend more to the amelioration of the art which is displayed in buildings, than would the advice to be furnished by a body in which much of what is architecture would be assumed to have no place, and in which the art-architectural, however viewed, would be in a position extremely contrasting with its actual importance. This is not saying that the profession should lose *prestige* that it has through connexion with the Academy, or not gladly see itself represented more largely there, and instruction in the drawing and modelling of the figure communicated to architectural students.

It may be interesting here to collect from the different lists, the statistics of the representation of architecture in the Academy since the foundation in 1768. Since that time, or to some period in the first half of this year, there have been in all, 156 Academicians, or painters, sculptors, architects, and engravers. We find by a simple calculation, that there were 74 associates who did not reach the honours of the higher grade. Out of the 156 Academicians, the names of seventeen are those of professional architects. The names, with the dates of election, are Thomas Sandby, William Chambers, John Gwynn, William Tyler, and George Dance, who were of the original nomination by George III.; James Wyatt (associate 1770), 1785; John Yenn (associate 1774), 1791; John Soane (associate 1795), 1802; Sir Robert Smirke (associate 1808), 1811; Jeffrey Wyatville (associate 1822, as Jeffrey Wyatt), 1824; William Wilkins (associate 1823), 1826; Charles Robert Cockerell (associate 1829), 1836; John Peter Deering (associate, as J. P. Gandy, 1826), 1838; Philip Hardwick (associate 1839), 1841; Charles Barry (associate 1840), 1842; Sydney Smirke (associate 1847), 1859; and George Gilbert Scott (associate 1855), 1860. The names of architects amongst the seventy-four associates are Edward Stevens, elected associate, 1770; J. Bonomi, 1789; Joshua Gandy, 1803; and Edward M. Barry, 1861. Chambers, Soane, Wyatville, and Charles Barry, who were knighted, seem to have received the dignity each at some date subsequent to their election as Academicians. An architect has not filled the presidency except once, and then only exceptionally for a single year. In 1805, James Wyatt was elected to the office in place of Benjamin West; but West was re-elected in 1806. The five names of presidents, excluding Wyatt, since the foundation, all are those of painters; and the four secretaries' names belong to the same branch of art. The keeper, as well as the librarian, has always been either a painter, or an artist in some walk of sculpture. The treasurer, however, having the care of the apartments or building, has always been an architect. The names are Sir William Chambers, 1769; John Yenn, 1796; Sir Robert Smirke, 1820; Philip Hardwick, 1850; and Sydney Smirke, 1861. The professors of architecture have been Thomas Sandby, 1768; George Dance, 1798; Sir John Soane, 1806; William Wilkins, 1837; C. R. Cockerell, 1839; and Sydney Smirke, 1860: but others may have lectured; at least Mr. Scott has. The professorship of perspective has never been filled by an architect; which is perhaps the reason that painters exhibit so much inability in that requisite of their art. It is, however, right to say that the number of lectures or lessons in the perspective course, has always greatly exceeded the number six, as in each of the other courses, painting, sculpture, architecture, and anatomy. The course of the present teacher of perspective is forty lessons. That is thirty-nine more than many architects have received, who have become accomplished draughtsmen; the reason of the great success of the architects, with less apparent study, being probably to be discovered in the fact that with them, the drawing of objects as they appear, is acquired and practised along with and by the aid of geometrical drawing, or the method of representing objects as they are.

The recommendations of the Commission would go to effect a considerable improvement upon this position of architecture in the Academy. An architect might be elected president, as in the case of most of the foreign academies. Certainly we can have no hope for the beneficial influence of the Academy over public works, or for the progress of sculpture and the correction of the present defects of our "public statues," or for the production of works of the first class in painting, till architecture is understood and appreciated by painters and sculptors, and placed on no inferior rank to their arts.

The machinery for the education of architects, is comprised in the lectures,—which are six on architecture annually, though subject to interruption on changes of the professor,—the opportunity presented of using the library on one day and three evenings in the week, and that of making one or two drawings from measurements of buildings, and other drawings "exemplifying the principles of sciography," and designs to prescribed subjects, in competition for medals. With

* See page 804, *ante*.

this however is included the opportunity of gaining the "travelling studentship," or occasionally a scholarship to the amount of 25*l.* for one year, but renewable by the council for a second year. The Appendix (No. 13), giving "Extracts from the Laws relating to the Schools, &c." is not clear without Sir Charles Eastlake's evidence: but the gold medals are offered once in two years; whilst silver medals are offered every year. The gold medal to architects, with the Discourses of Reynolds, and other books, is offered "for the best-finished design in architecture" to a determined subject, shown in plans, an elevation, a section, and a perspective view. The scholarship may be offered added to the offer of the medal; but is not tenable together with the travelling studentship. The travelling student is eligible in each class, painting, sculpture, and architecture in rotation, from among those who have obtained gold medals. The allowance is 100*l.* annually during two years, and 60*l.* for the journey and return. But according to the same Section, 5, relating to "Travelling Studentships," of the Laws, "a travelling studentship for one year, with an allowance of 100*l.*," further, is to "be annually offered to all students in architecture, except during the term allotted to the gold medal student in architecture," candidates being "allowed a limited time to produce, in the Academy, an original design" to a prescribed subject. This annual travelling studentship for architects,—additional to the other for two years, which is taken in turn between the three classes,—comes into effect this year; and it is a concession to the claims of our art, for which we would award the Academy great praise. The silver medals to architects are offered for the best accurately-figured drawings from given subjects, the measurements being made by the students, for the best perspective drawing in outline, and for the best drawing exemplifying the principles of sciography.

There is considerable difference of opinion amongst the painters, on numerous points of the question of the utility of foreign travel. Several of them express reasonable doubt whether lengthy sojourn in Rome is desirable as a feature in the training for their branch of art. But they would speak unhesitatingly as to the advantage to architects, of such a residence as the five years in Rome, of the students who have gained the prize of the French Academy; and they appear to be backed by the sculptors. The list of nations maintaining pensioned students in Rome, given in a letter by Mr. Gibson, referred to by Sir Charles Eastlake, as quoted by Earl Stanhope, in 1860, in the House of Lords, was originally put forward as inducement to the English Government,—spending, in the words of the writer of the letter, "large sums to erect public monuments,"—to follow example, and contribute something "towards the training of their students," so as "in the course of time to have public monuments that would be an honour to the nation." But there is error in the following otherwise very noteworthy passage in the examination of Sir Charles Eastlake. The chairman is questioner.

"518. I have spoken hitherto of sculpture and of painting, but Mr. Gibson has also intimated his opinion that the same system of studentships at Rome would be highly advantageous as regards architecture, and that study at Rome would tend to elevate and refine the style and taste to be exhibited in public buildings; are you of the same opinion?—I have not a doubt of it. I think that the system adopted by the French Government with regard to architects sent to Rome is most judicious. They are always required to restore some antique building; the practice has been going on so long that French students in architecture who now go to Rome are almost at a loss to find a building which has not been restored. The collections of drawings, which must by this time be accumulated in Paris, of that description, must be extremely valuable."

The system referred to by Sir Charles, as he would on consideration see, is, or was, not quite so judicious as he has represented it. We say "*was;*" for, we shall have an opportunity of stating that the system has already received some modification. Notification to the effect has appeared in the *Moniteur*, since the publication of our last article.

The value of the drawings in Paris may be great, as we know is that of many of them that have been published; and Rome may demand more of the architect-student's attention, than any other place. But to give it exclusive attention during such a number of years as five, seems to be to prepare the architect to be narrow-minded and the reverse of artist. Mr. Tite scarcely thinks that great value is attached by architectural students to the travelling studentship,—that is the mere money,—though the gold metal is "very anxiously sought after." He speaks of Northern Italy as affording "infinitely more objects for study" than Rome, and of the desirableness of visiting Greece and Asia Minor. Mr. Scott of course referred to the importance of France for Gothic architecture. Mr. Ruskin being asked as to the system of the French Academy, or one allowing of visits to Venice or Lombardy, said of the two systems, "I should prefer the latter; if a man goes to travel, he ought to travel, and not be plagued with schools." If we might revert to the question of the painter's education, it would be interesting to quote the words of Mr. Herbert, who thinks that generally, much harm accrues to a student from going to Italy, and who would abolish the travelling studentships altogether, unless the students went to Egypt or Algeria, or to countries where art is not found, and where the mind would be directed to nature. Several of our best artists have derived little or nothing from residence in Italy. Mr. Maclise has never resided there for any lengthened period. Sir Edwin Landseer has never been in Italy, though he considers there is advantage, to a student in painting, to be derived from a sojourn in Rome.

We are certainly not inclined to set a low value on travel, as contributing to the education of the architect, or upon a residence of some duration in a foreign capital where many fine works may be seen. On the contrary, we have ere now said, that there is no substitute, not even photographic representation, for seeing examples themselves. Moreover, if the mind keep from being narrowed, there is even value in knowing one thing or class of works thoroughly. But, the error is very great into which some of our architectural students now fall, of studying only what is within easy reach, or attending to the models of only one style, as in the French or the Italian Gothic; and thence, reasoning and acting as though such models comprised the whole capitalized wealth of architecture. The error would be the same, of keeping for five years to the exclusive study of even such works and relics as there are in Rome; and it is not surprising that the French system has not produced results that might have been expected from some of the most promising students sent there. If any place at all deserve from the English student a lengthened residence, that place would be Paris, where work is actually going on. It is necessary to see models themselves, that have contributed to the development of new art in the modern works; but the student must be kept thinking, comparing, and reasoning, as well as drawing and measuring buildings. He will never be an architect without the drawing; and he will never draw or design works of *art*, unless he attain the skill and possess the faculty in youth: but he will be only a draughtsman, not an architect, unless he seek early to understand the different working of many artist-minds. The architects who have done most for the embellishment of Paris, are men who have derived their qualifications from the emulation amongst students, kept up by the system, defective though it may have been, of the École des Beaux Arts, and from the practice of the *ateliers*, added to the effects of the atmosphere of art, as we may call it, which the French capital presents in buildings and decorations, in general tone of society, and in books and publications which are far more numerous, more prominently exposed, and more cheaply attainable than with us. In contrast with the atmosphere figuratively referred to, we in London have the depression of art-energy and art-appreciation, the combined effect from the actual atmosphere that we pollute. Those French students who have been to Rome, have always retained the *prestige* from having gained the "*grand prix;*" many of them have been after their return, chosen as members of the Conseil Général des Bâtiments Civils, or to conduct researches in various countries; or they have published illustrated works of value, results of their investigations; but they have not contributed very much to the art-work which there really is in new Paris. Such work, or most of it, has been produced by men whose names have hardly got to this side the Channel.

Whilst, on this matter, the evidence of some of the witnesses tended to erroneous conclusions, it is to be regretted that more stress was not laid upon the French *atelier* system, as it is called, or that which is developed into the practice of the co-operation of the pupil in the production of his master's works. The most important evidence received by the Commission, referred to the operation of the system in painting of the class suited to the decoration of public buildings. But, beyond the interest which such evidence must have for us from the connexion with architecture of a branch of painting which may be even called a branch of architecture, the evidence, with that on the other side, or stating the difficulties in the introduction of the system in this country, is highly suggestive in the question of the education and early career of our architects. Mr. Edward Armitage gave to the Commission, in his evidence, and in a letter to Lord Elcho (which appears in Appendix, No. 27), a particular account of the manner of his assistance and that of three other pupils of Delaroche, in the production of the great picture in the Hemicycle of the École des Beaux Arts; and the general subject was treated in the evidence of several others. Mr. Armitage indeed said that there was "not a sufficient demand for historical art in England" to create such schools as those of the great French artists, "that the public eye is not yet sufficiently educated to detect" the "weakness in drawing," of portrait-painters and landscape-painters; that, for the assistance in high class work, as mural decoration, to be serviceable," the pupils "must have been educated by the man who employs them," &c.; and that the "present pupils could not do it." And he subsequently said that in England "nobody knows what drawing is," two hours a day being considered sufficient for learning it; whilst the students in France attend four to five hours a day in the *ateliers* of their masters, and two hours in the École des Beaux Arts. He thinks, however, in his letter, that the experiment of assistants in great mural works would be "worth trying;" though he says the assistance should be given gratuitously, as in his own case. It is discouraging to read that portion of Mr. Dyce's evidence which refers to this subject. When M. Dyce undertook his frescoes in the Houses of Parliament he "expected to have been able to make use of pupils;" but," he says,—

"after a trial I was obliged to give it up. I tried three or four young men, but I found that they could give me no assistance.

4179. Were they Academy students?—I did not take them from the Academy. I do not know whether they had been Academy students; but I found that I could not avail myself of their services."

He seems to come to the reason in answering the following question, thus:—

"4180. Still it was by that very system of employing pupils under a master, that most of the great works in Italy were completed?—Yes; but there were no exhibitions then. A young man, as soon as he is able to put anything before the public, rushes to the exhibition with it, and if it sells, the notion of his assisting anybody else is quite hopeless."

Mr. Maclise had previously expressed approval of "that system by which an artist organises a school," but said "it is difficult to obtain" assistance such as would be required for production of a "fresco" like that "in the House of Lords." Mr. Maclise continued, answering question 1480,—

"Young men now-a-days achieve a little success by painting a picture, and they will not do such work. I have often had my eye upon young men of the Academy and elsewhere, with a view to such employment, but I never could get effectual assistance."

He "would employ young" men if he could: his labours would be greatly lightened.

Mr. Watts having made the valuable suggestion that the walls of public schools, as Eton, should be decorated by Academy students,—it might be after Flaxman's designs,—gives his opinion of the advantage of working in the manner described by Mr. Armitage; though he, Mr. Watts, had "never studied in any school." As to sending students to Italy, Mr. Watts considered it was not absolutely necessary, considering the works of art that there are in England; though it was obvious that "the mind must be enlarged" by travel; but he said the present system of sending a student for three years, and leaving him to do much as he pleases, was "productive of no great result," &c.; and a branch academy at Rome would be an improvement. He said:—

"As far as I know, no travelling student has ever turned out to be a distinguished artist, except in the case of Mr. Hook, who only remained in Italy a small portion of his time."

Mr. Watts forgets Mr. Kennedy, who should long ago have been an Academician.

Obstacles to the introduction of the *atelier* system are referred to in the examination of Sir Coutts Lindsay, Bart., who, after allusion to one of the rare instances in England,—mentioning that Sir Charles Eastlake was a pupil of Haydon,—specifies the employment of artists on easel pictures, and the fact that fresco-painting has been misunderstood by artists, and so has not extended the taste for it which he recognizes as capable of development amongst the public. This witness, Mr. Layard, and Mr. Watts, express much the same views as to the existence, in this country, of a taste for mural decoration and historical painting, wanting only that some action should be taken by the Royal Academy, which, Mr. Layard says,

"the fact is," "ought to be an *atelier* on a very large scale; it should be an *atelier* undertaken by a body of men instead of one man." Mr. Layard thinks the church in Margaret-street defective, from the appearance of different minds having been at work. Mr. Watts looks upon "architecture as one of the most important branches of art," and he adds,—

"I lament that the three branches should be called three branches; they were not considered as three branches formerly, but were combined in one, and were practised by one and the same man."

This, of course, may be opposed to the views of Mr. Fergusson, to whose evidence we have alluded, and shall revert. But we quote the next question and answer in the examination of Mr. Watts:—

3163. "The architect builds, while the painter decorates the work of the architect in many cases; in fact, the most monumental painting is that painting which decorates the work raised by architects?—Yes, and the noblest. It would be highly desirable to stimulate as much as possible the taste for that in England, and I think that if a number of buildings were decorated a taste would grow up. *What we have not known we do not care about, but we should care about it if we had it set before us.* It seems to me that it would be highly important, whether it were done by the Royal Academy, or by any other public institution, to decorate the public buildings of England as much as possible. *It is the only way of making the fine arts general.*"

And afterwards:—

"3180. (*Lord Elcho*) Do you think that the taste for those mural decorations is increasing in this country?—Not so much as would be desirable, but that is mainly because they are not enough seen. They are only executed where the public at large do not see them, and I think also they are much too expensive. I should at first employ students upon them, and scatter them abroad as much as possible."

We are not yet through the evidence.

BRITISH PAINTERS.—NEW MATERIALS FOR THEIR LIVES.

Richard Wilson, R.A. (1713-1782).

There is a quarto "Life," so called, of Richard Wilson, the father of our English school of landscape painting. The author, a Mr. Wright, was "a dead hand" at a Life, entirely ignorant of the wants of biography, and incapable of saying clearly and succinctly the little he had to say. Allan Cunningham has told in twenty pages concisely and clearly all that was readily at hand, or the traditions of studios had preserved, to illustrate and relieve a bare narrative of facts. To what Wright and Cunningham have told us, I shall now add a few scattered memoranda respecting Wilson, and a catalogue (*the first of the kind*, and sadly needed) of Wilson's works, with the little information of any moment that is known about them.

Barry, *the great Adelphi* painter, has given us a portrait of Wilson in words, a portrait overlooked by Wilson's biographers. How fine is the reference to Snowdon:—

"I remember meeting Mr. Wilson, one day, looking over a collection of pictures at Prestage's Auction Rooms: on his pointing out with much enthusiasm some excellence in the middle distance of a picture, to which he wished to direct my attention, 'Yes, yes—very true; I heartily agree with you,' said I. 'Surely there is no man now living who is able to paint a landscape of so much excellence!' Though this was said almost laughingly, yet I saw his countenance lower, like a tempest gathering on his own Snowdon; and, seizing him by the elbow, 'My dear Wilson,' said I, 'don't be angry. I only wanted to show you the use, or, rather, the abuse to which your remark might be converted, after you had left the room, by such men as *Blackwood*, or the *Doctors Chauncy* or *Bragge*, had anything in their possession been the subject of your remark.'"*

The Mr. Prestage alluded to was an auctioneer of note—a kind of Christie in his day. His "Great Room" was at "the end of Savile-row, next Conduit-street, Hanover-square." I have several of his sale catalogues. Three before me while I write are those of Dr. Bragge and Mr. De Pesters, of Hanover-square. Chauncy was a skilled collector.

At p. 200 of Cunningham's "Life of Wilson" (second edition), is the following note relating to Wilson's famous picture of Ceyx and Alcyone, said to have been painted *for* a pot of beer and the remains of a Stilton cheese.

"From an eminent member of the Royal Academy I have received the following version of this story, to which I could add three others. I have retained in the text the most popular one:—

'In the anecdote of Wilson's painting the Ceyx and Alcyone, there is a slight mistake. The castle and rock of the picture were painted *from* and not *for* a pot of porter and a Stilton cheese. From what I have repeatedly heard Farington say, it was not so much the low prices which Wilson got for his pictures, as the general want of employment which he had to complain of. For such pictures as those of his which Farington had, and Constable has, he used to receive from ten to fifteen guineas, which, according to the value of money then, is quite equal to the prices received by almost any of us now. I won't name the exceptions—I can only say that I am not one.'"

The "eminent member" of the Royal Academy was Sir Augustus Callcott, the landscape painter and R.A. The new version of the story is contained in a letter to Sir Francis Chantrey.

Beechey, we are told (Cunningham's Lives, i. 209), was the steady friend of Wilson: listen, then, to an overlooked account of Wilson, given by Holcroft, the dramatist, direct from the lips of Beechey:—

"Wilson," Beechey says, "was indolent, and, in his latter time, used to make several attempts at each touch, before his hand reached the precise place. In this manner a picture would remain several days on the easel with but little apparent progress. If B[eechey] be accurate, the colours on Wilson's palette did not exceed four, and his common menstruum was linseed oil, instead of other oils eight or ten times as dear. He had much comic humour, would turn from his easel to the window, make whimsical remarks on the passengers, pause to recollect himself, and begin painting again. He was addicted to liquor, by which his nose became enlarged, and so irritable, that the handkerchief was frequently applied to it, and kept in his bosom for that purpose. Glad of every opportunity to escape from labour to his favourite indulgence, he would say to any acquaintance who happened to call, 'Come, let us go and take a drop of something. I have painted enough for one day.' *Farington* and *Hodges* were his pupils; and, many of the pictures that pass for *Wilson's* were painted by them, but retouched by himself. Thus the same picture became multiplied. He would even buy copies made from his pictures, work upon them, and sell them as his own. To a certain degree they were such, but the practice was dishonest; for an unskilful eye could not detect the inferior parts. Acts like these are the ruin of honest and well-earned fame. *Wilson*, however, was a man of uncommon genius, of which he has left sufficient and undoubted proofs. He and *Sir Joshua* had conceived some ill-founded prejudices against each other. Under their influence, *Sir Joshua* once said, at the Academy, *Gainsborough* was the best English landscape painter. *Wilson*, happening to be unperceived at his elbow, replied, 'You mean the best English portrait painter.' If it was not *Opie*, I forget who gave me this anecdote."—*Holcroft's Memoirs* vol. iii., p. 23.

The Gainsborough story is told in Northcote's "Life of Reynolds," ii. 237, second edition.

No. 41 of the Art Treasures Exhibition at Manchester in 1857 (British School) was a most exquisite little landscape, by Wilson, full of Cuyp-like sunshine and perfect in point of condition. The to be envied proprietor of the picture, Mr. Entwisle, the banker, Manchester, has the following memorandum respecting it, in the handwriting of Mr. Winstanley, the well-known auctioneer:—

"The St. Marino view by Wilson was painted for John Hunter, the celebrated anatomist, in whose study it hung for many years. Wilson received twelve guineas for it, and often visited it in his later years.

"At Mr. John Hunter's sale, Mr. Speirs bought it for forty-seven guineas and a half; and he kept it until within these three years, when he sold it to George Townley, Esq., of Bristol, for three hundred and fifty guineas, from whom it was purchased by Mr. Peter Norton, of London, for the same sum. I gave Mr. Norton four hundred guineas for it. The rest you know.

(Signed) "Tho. Winstanley.

"*Manchester, Oct.* 16, 1813."

From John Hunter's twelve guineas to Mr. Entwisle's (I believe) five hundred guineas, is a pretty smart leap in any history of "prices."

Paul Sandby, the well-known landscape painter (whose skill and industry have preserved many buildings now no more), was an admirer of Wilson and a collector of his works. Sandby's sale took place at Christie's, 2nd, 3rd, and 4th of May, 1811, the Catalogue recording "An Invaluable Assemblage of near 70 original Drawings by Wilson." A few tempting lots, real Richard Wilson's, will repay perusal:—

106 (First day). A singular study of rocks: fine effect of sunshine.

97 (Second day). Two original drawings,—View on the Banks of the Dee, in Cheshire; ditto in the Garden at Lerici.

106. A pair. Views of the Brick Kiln in Windsor Park; and View on the River Wye; painted in body colour on panel.

107. A Sutler's Tent near the Serpentine River, Hyde Park, during the Encampment, 1780.

108. A View near Bethgellert.

109. A View of Langolin, Denbighshire.

110. A View of Snowdon from Llanberris Lake.

80 (Third day). A drawing,—The Effect of a Storm. It was from this sketch Mr. Wilson took the idea of painting his celebrated picture of the "Niobe."

81. A ditto,—A Fragment of a Rock. This study appears to have been greatly admired by Mr. Wilson, who introduced it into several of his pictures.

Genuine and fine drawings by Richard Wilson are of rare occurrence, and command high prices.

The last London residences of Richard Wilson were No. 85, Great Titchfield-street, Marylebone; and No. (unknown), Tottenham-street, Rathbone-place. Great Titchfield-street is memorable in the history of English art; for here, only five years after Wilson's death, was born, 18th September, 1787, William Collins, whose sea-shore scenes with shrimpers, "Rustic Civility," and "Happy as a King," have given him an honourable and high position in the British school of art.

A dated list of Wilson's exhibited works will be of use:—

Wilson's Exhibited Works.

1760. A large Landscape with the Story of Niobe.
" A small Landscape, Monument of the Horatii on the Appian Way.
" A small Landscape, the Banks of the River Dee.

1761. The Bridge of Rimini, with the Republic of San Marino.
*** In 18— (?) in the possession of W. Leader, esq.
" Temple of Clitumnus, its companion.
" The Lake of Nemi.
" Its companion.
" Large Landscape with Historical Figures.
" View near Chester.

1762. A View of a Ruin in her Royal Highness the Princess Dowager of Wales's Garden at Kew.
" Its companion.
" A Landscape with Hermits.
" A View of the Thames near Richmond.
" A Ruin at Tivoli.
" A View of Holt Bridge on the River Dee.

1763. A large Landscape with Phaëton's Petition to Apollo.
" A View from Tivoli towards Rome.

1764. A small Landscape with a Ruin.
" Ditto, its companion.
" The Convent on the Island called L'Anconetta, near Venice.
" A Landscape and Figures.

1765. A View from the Villa Madama, three miles from Rome.
*** In 1824 in the possession of the Earl of Egremont.
Edwards says (Anecdotes, 4to., 1808, p. 79) that "The Villa Madama" "was purchased by the late Marquis of Tavistock."
Engraved, 1765, by William Byrn.
" A Summer Storm, with the Story of the Two Lovers (Celadon and Amelia), from Thomson.
*** In 1814 in the possession of William Smith, esq.
" A Landscape and Figures.

1766. North-west View of Snowdon and its Environs.
" Carnarvon Castle.
" Banks of the Tiber.
" A Landscape and Figures.

1767. View from Moor Park towards Cashiobury, Watford, and St. Alban's.
*** Two Views from Moor Park were (1814) in the possession of Lord Dundas.
" Landscape and Figures.

1768. A Storm at Day-break, with the Story of Ceyx and Alcyone.—Ovid Metam.
" A View of the Lake of Nemi from Gensano.

1769. (*The First Royal Academy Exhibition.*)
" A Landscape.
" Its companion.

* Barry.—Letter to the Dilettanti Society, 4to., 1798, p. 52.

1769. A Landscape.
1770. A Landscape, with Historical Figures.
„ Cicero and his two Friends, Atticus and Quintus, at his Villa at Arpinum. *Vide* Cic. de Leg., lib. 2, p. 74.
*** In 1814, in the possession of William Fitzhugh, esq.
Do. (in 1814) in possession of John Hawkins, esq.
Do. (in 1814) in possession of Sir W. W. Wynn, bart.
Engraved, 1778, by Woollett.
„ A View, three miles from Rome.
„ A ditto, on Hounslow Heath.
1771. A View near Winstay, the Seat of Sir Watkin Williams Wynn, bart.
" A View of Crow Castle, near Llangollen, in Denbighshire.
" A View of Houghton, the Seat of the late Marquis of Tavistock, in Bedfordshire.
1772. A large Landscape and Figures.
„ A small ditto.
1773. A Landscape.
1774. A View from Castello Gondolfo, towards Rome, including the Alban Lake, Monte Cavo, the Campania di Roma, ending with Monte Soracte, and the Sabine Hills.
„ The Cataract of Niagara.
*** Engraved, 1774, by William Byrn.
„ A View of Caderidris Mountains, in North Wales.
„ Oakhampton Castle, in Devonshire, built by Baldwin de Bryone, before the Conquest.
*** In 18— (?) in possession of the Hon. Richard Howard.
1775. The Passage of the Alps at Mount Cenis.
„ A View from Muswell Hill, including Minchenden House, the seat of the Duke of Chandos.
*** Sold to Lord Leigh [? when] for 204*l.* 15s.
„ The Lake of Nemi, or Speculum Dianæ, twelve miles from Rome.
„ A Hermitage at Marino.
1776. A view of Sion House, from Richmond Gardens.
*** In 1814, in the possession of William Leader, esq.
In 1824, in the possession of William Daniell, esq., R.A.
1777. A Landscape, with historical figures.
„ A View from Tivoli towards Rome.
„ A View of the Lake of Nemi, the ancient Speculum Dianæ.
1778. View in Windsor Great Park.
1779. Apollo and the Seasons.
„ A Landscape, with Gipsies.
„ A View in St. James's Park.
„ A Review on Wimbledon Common.
1780. View of Tabley, Cheshire, the seat of Sir John Leicester.
*** Lot 42 of the famous Lord de Tabley sale, by Christie, 7th July, 1827.

I will now give a catalogue, as full as I can make it, of—

WILSON'S PRINCIPAL WORKS.

1. A large Landscape, with the story of Niobe and her Children.—Four pictures exist: 1. That exhibited in 1760, in the first exhibition in the Great Room, Spring Gardens; bought by William Duke of Cumberland (died 1765); since, the Duke of Gloucester's; now (1856), Mr. Wynn Ellis. The burst of light in Mr. Ellis's picture infinitely fine. 2. That presented to the National Gallery by Sir George Beaumont, who bought it of Wilton, the sculptor. 3. Bridgewater Gallery. 4. Collection of H. A. J. Munro, esq., London. Dr. Waagen mentions an example of the "Niobe" at Thirlestain House, "of particular beauty, and various changes in the figures" (iii. 211). Fine engraving by Woollett, 1761. Nollekens Smith assures us (Nollekens, ii. 143) that Wilson received for his "Niobe" 100 guineas.

2. Phaeton.—1. Blundell Weld, esq., Ince, near Liverpool. 2. Earl Cowper, Panshanger. Engraved by Woollett.

3. View of Rome.—Earl of Dartmouth.

4. Mæcenas's Villa at Tivoli.—Six pictures exist:—1. That painted for the Earl of Thanet, purchased by Sir Geo. Beaumont, and presented to the National Gallery. 2. That painted for Mr. Benjamin Booth, of the Adelphi, lately in the possession of the representative of Richard Ford, esq., author of "A Handbook for Spain," and the maternal grandson of Mr. Booth. Sir John Leicester offered 500*l.* for this picture. 3, 4, 5. W. Leader, esq. (1814), J. N[ewington] Hughes, J. Farington, esq. 6. Dulwich Gallery.

5. Lake of Nemi.—Four pictures exist:—1. Sir R. C. Hoare. 2. Richard Ford, esq.

6. Cicero at his Villa.—1. John Hawkins, esq. (1824). 2. Sir W. W. Wynn, bart. (1813). 3. Rev. W. A. Fitz Hugh (1842).

7. View of Anconetta.—J. Heywood Hawkins, esq. (1844).

8. Tomb of the Horatii and Curatii.—In 1824 in the possession of T. Wright, esq., the biographer of Wilson; afterwards in Mr. Bicknell's collection. It is nearly 5 feet in length, and is signed "R. W. Roma, 1754." In 1760 Wilson exhibited "A small Landscape, the Monument of the Horatii on the Appian Way."

9. Temple of Clitumnus, near Rome.—J. Heywood Hawkins, esq.

10. Villa Adriana.—Viscount Palmerston (1813), Robert Vernon, esq. (1841).

11. View in Italy.—Exhibited at the British Institution in 1843 by William Wells, esq., of Redleaf. Most beautiful, though small.

12. Strada Nomentana.—Robert Vernon, esq. (1841).

13. View on the Tiber, with Rome in the distance.—H. A. J. Munro, esq. Grand.

14. Celadon and Amelia.—William Smith, esq. (1813); John Allnutt, esq. (1843). Engraved by Woollett.

15. Landscape, with Meleager and Atalanta.—Sir Thomas Baring, bart.; Samuel Rogers, esq. Engraved by Earlom.*

16. Ceyx and Alcyone.—Engraved by Woollett.

17. Solitude . . . .—In 1814 in possession of J. Todhunter, esq. Engraved, 1778, by Woollett & Ellis.

18. View on the River Dee.—1. Grosvenor Gallery. 2. Sir Thomas Baring, Bart. In 1760, Wilson exhibited "A small Landscape, the Banks of the River Dee."

19. View in Wales, large and good felling timber in the foreground.—Sir W. W. Wynn, Bart.

20. Tabley House, Cheshire.—Was in the Leicester Gallery. Constable speaks of it as "a large solemn, bright, warm, fresh landscape, which still swims in my brain like a delicious dream."

21. Pembroke Castle, South Wales.—In 1849, Sir R. W. Vaughan, Bart. (fine).

22. Snowdon, North Wales.—In 1849, ditto.

23. Landscape (evening effect).—Samuel Rogers esq.

24. Sion House, from Kew Gardens.—W. Leader, esq. (1813); then to W. Daniell, R.A.; next to H. A. J. Munro, esq.

To this enumeration I have to add:—Four small pictures in the Vernon Gallery; one in the Bridgewater Gallery; five at H. A. J. Munro's, esq.; three belonging to the late Richard Ford, esq., author of the "Handbook for Spain." They were painted for Mr. Booth, of the Adelphi. One at Miss Rogers's (the poet's sister); one at W. Fuller Maitland's, esq., Stansted House; two at Petworth; one at Panshanger; one at the Royal Institution, Edinburgh; one at Keddleston Hall, Derbyshire (Lord Scarsdale's); one at Narford, in Norfolk (Mr. Fountaine's); and one at Wilton House.

Eighty-one pictures of this distinguished painter (many contributed by Farington, his pupil) were exhibited at the British Institution in 1814. A revised and enlarged Wilson Exhibition in 1864 would render a real service to English landscape painting. We are losing breadth of effect and "selection" in mere manipulation of photographic and botanic detail. Hobbema and Peter Nasmyth are masters in mere imitative art—adepts in exquisite minute touches; but Richard Wilson does much more—he (I use another Wilson's† words) places Nature before your eyes and before your imagination. PETER CUNNINGHAM.

* Six small pictures by Wilson were sold at Mr. Rogers's sale at Christie's in 1856: the prices ranged from 130 to 135 guineas.

† Professor Wilson, the poet.

SCIENCE IN SHOPS.

HALF a century ago our forefathers recognized but few of the advantages of division of labour: a tradesman engaged in half a dozen different businesses; but a tendency to elaborate the workings of this department of social science, to divide and sub-divide the occupations by which men obtain livelihoods, is quietly gaining ground. Fifty years ago a country chemist was, generally, also a bookseller, printer, book-binder, owner of a circulating library and fancy repository, a vendor of musical instruments, and, in all probability, a dealer in brushes and perfumes: in other cases, one counter in his shop was devoted to the sale of haberdashery or grocery, or both; the other to that of drugs. Drapers furnished funerals, sold boots, shoes, hats, and were tailors too. Going further back we know that the term grocer, now applied only to dealers in tea, coffee, and spices, was originally synonymous with that of merchant, one who engrossed every kind of merchandise. To this day, in small north-country towns, ironmongers are smiths, plumbers, and glaziers, and sell haberdashery, such as thimbles, needles, and pins; dealers in glass and china are coopers, basket-makers, brush and mat dealers, and vendors of toys and mock jewelry; grocers are wine and spirit merchants, or tobacco manufacturers; cabinet makers are auctioneers, undertakers, paperhangers, and upholsterers; and in villages, there are still more complicated combinations in the traders; but in larger spheres the advantages to be derived from a concentration of attention to one branch of the arts or one department of commerce are becoming generally understood. The building trades scarcely follow this rule, except as to individual labour: in large communities, one contractor undertakes to furnish every kind of material and handicraft required: in small communities the master-man of each craft takes a separate contract, to which his liability is limited.

It is, however, more especially to the application of sanitary science to shop-keeping that we now refer. Every trade may, more or less, be benefited by it,—not, of course, in the amount of business transacted, but in the cost of life and health with which it is attended; and the manner in which it is so affected is, to a great extent, attendant upon the mode in which shops and shop-fittings are planned and constructed. On entering a chemist's shop, it is seldom but that our olfactory nerves are saluted with a combination of strong smells that convincingly account for the pallid countenances of the persons that are employed in it. If fitted up, however, on what might be called scientific principles, there would be no more smell than there is in a duchess's drawing-room. It will be conceded that the aroma of a drug is part of its value: deprive it of its scent and you rob it of much of its taste: it is, therefore, true economy to provide such conditions in its place of deposit that none of its smell shall escape. Place every drug in a receptacle whence none of its properties can escape, and there is no smell left in the chemist's shop. Again, if a range of fixtures were to be devoted exclusively to oils, another to essences, another to poisons, and so on, instead of these various matters being disposed promiscuously, the only regard being paid to the size of the bottles required to hold them, we should hear still less frequently of mistakes in the making up of prescriptions, with their consequent train of miseries. These are plans proposed by those who have given the subject attention, and adopted with the realization of every expectation formed concerning them, in some instances of newly-fitted chemists' shops. The contents of the shops of chemists and druggists have another and still more weighty, because extensive, bearing upon the public health. Chemists can tell of many wonders of the earth and the air and the deep, but nothing more wonderful than the mystical manner in which people are able to persuade themselves that everything that comes out of a physic-bottle does them good. Old ladies with all the tremble of aspen-leaves in their withered hands, women in the heyday of fashionable life, as well as the wigged and brass-buttoned beaux of the last generation and fast men upon town, frequent the chemist's shop for draughts that will steady the shaking hand, re-kindle the faded eye, re-vivify the stiffening gait, or remove the splitting headache. A draught of *eau-de-vie* rendered still more subtle in its effects and pungent in its taste by a combination with sal volatile and the yolk of an egg, if poured out of a physic-bottle instead of a decanter, is assumed to have completely altered its character. The most concentrated stimulant, if taken in the form of a pill, is deemed innocuous. Musk pills, for instance, are swallowed in confident and complacent anticipation of their rejuvenescent properties by patterns of propriety who would shrink from the odium of taking a recognized stimulus. So largely are wines and spirits used in the making up of stimulating draughts, that a chemist takes out a licence as a matter of course. The inquirers into the ramifications of sanitary science have not yet taken into consideration these outside facts.

The adulteration of food as sold in shops, the disastrous effects of what is called the "long hours system," in which fourteen or sixteen, and occasionally eighteen, hours out of the twenty-four are spent in close confinement to business, whether in a sitting or standing posture, have chapters of their own. The importance of a

judicious ventilation of shops enjoys no such prominence on the pages of science: in the planning of shop-fittings this necessity is but too frequently overlooked. In the summer months, it will be argued, every shopkeeper keeps his door open, and thus sufficient ventilation is insured; and in the winter there is enough cold air wafted in every time it is opened to supply the necessary change. But the thousands of shop-assistants will tell a different tale. When they first enter their respective shops in the morning, they are nipped with cold: as the fires or stoves draw up, the temperature becomes more equable; but as the evening wanes, and dozens or scores of gas-burners are lighted, the air is as oppressively heated as it was inclemently cold: they endure, in other words, every day throughout the winter all the alternations of climate they would experience in a diurnal transformation from the Hebrides to Hindostan. The proper heating and ventilation of shops is as imperative as that of work-rooms, and there is no chance of effecting these unless they are constructed on scientific principles. We have been called a nation of shopkeepers, as a term of reproach. Calling art and science to our aid, let us make our shops as handsome as palaces and as healthy as the hills.

QUARTERLY WRITERS ON ENGINEERING.*

OF all the departments of knowledge supposed in this age to be accessible to that mysterious being the general reader, engineering science visibly plays the most prominent part. The daily realizations of Arabian Night dreams by engineering means, and the intimate interweaving of mechanical science with almost all the phases of modern life, naturally create a curiosity in the popular mind as to the causes of these remarkable effects. There is thus a demand for capable popular writing on these subjects,—a demand which appears to exceed the supply. The most audaciously insufficient trash is the result. Just as each ignorant pretender, lacking everything but impudence, now-a-days dubs himself a "C.E.;" just as every boy so unlucky as to scrawl a sketch with the mistiest resemblance to a steam-engine is at once styled "a mechanical genius" by his fond mamma; so does every smatterer, scarcely able to distingush a pump-bolt from a cow's tail, think himself capable of writing on engineering matters:—

> "As he that makes his mark is understood
> To write his name, and 'tis in law as good;
> So he that cannot write one word of sense,
> Believes he has as legal a pretence
> To scribble what he does not understand,
> As idiots have a title to their land."

It is impossible to take up any of the morning papers without noticing some of the engineering forms of this disease; but the exigencies of daily publications are some excuse: when, however, we see the *Quarterly Review* stoop to blunders, it seems necessary that some notice should be taken of it.

Under the title of "Progress of Engineering," the present number of the *Quarterly*, as we have already mentioned, has favoured the public with a supposed "bird's-eye" view of ancient and modern engineering. The paper claims to be a compound boiled down from all the "Proceedings of the Institute of Civil Engineers;" supplemented by Mr. Smiles's "Lives of the Engineers," and by the late speech of Sir William Armstrong at Newcastle. The editor of the *Review* has placed it at the post of honour, the beginning of the number.

The belief of some editors of popular periodicals that experts cannot take a bird's-eye view of their several professions, may be well founded; and it may be true that the productions of amateurs are often more readable than those of experts; just

> "As little sparkles shine more bright,
> Than glowing coals that give them light."

The *Review*, however, has a quarter of a year's time to compile its lucubrations.

One of the most astounding bits of information vouchsafed to us by the *Quarterly Review* is the following:—"When we first made railroads we allowed a quarter of an inch free space between each bar, and took every precaution for freedom of expansion and contraction, till one man, bolder than the rest, proposed *to butt them one against the other, and join them with fish-plates.* This has now been done, so that the rail from London to Aberdeen is one continuous unbroken bar; *it neither expands nor contracts (!), but submits.*" We should be sorry to see the reviewer travel on a pair of "continuous unbroken bars." If he insisted on the trip, we should recommend him to previously make his will. For the "continuous unbroken bar" in January would be a wriggling serpentine bar in June, diversified in some places by a series of picturesque long-bows of iron. Some occult and mysterious force is here supposed to belong to "fish-plates," by which they acquire the power of temporarily suspending the law of nature of the expansion and contraction of metals by heat, in the same way as it is in human power (p. 310) "to eliminate friction and other resistances which are not inherent" (to bodies). We find (p. 294) that "air is, perhaps, too elastic to be ever practically used as an accumulator." The "perhaps" in this sentence would make the assertion excusable if the reviewer had never,—which we can scarcely think,—seen a common air-gun. We are further informed that Cornish boilers are so economical principally because "the fire-bar area is so great;" that some steam-engines make 1,000 strokes in a minute; that locomotives consume "coals with reckless wastefulness;" and that the "vital heat" of a locomotive "is launched into the air with the waste products of combustion." Such statements are below criticism. When the reviewer writes that "it is no hyperbole to say that already, within the last hundred years, the engineers have doubled the mechanical power, and have thus doubled the productive resources of mankind," engineers would be very much flattered, did they not remember that engineering has done much more. A rolling-mill employing 100 men, will turn out 10,000 tons of iron per annum. The manufacturing power of each man is thus 100 tons of iron per annum. A rolling-mill is thus estimated by M. Michel Chevalier to have multiplied the manufacturing power of one man by thirty. One man can now spin 400 times more thread than in 1769, when Arkwright took out his first patent. Compared with what one man could do at the ancient wind-mill, a modern miller can grind about 150 times as much corn. The new mechanical appliances now used in California for extracting gold have multiplied the productive power of a single gold-digger by 2,500. By means of modern machinery one woman can now make 100 times as much lace as by hand-work. An iron-plated ship, of say 1,400 horse-power, nominal, has, in reality, the power of 42,000 horses of flesh and blood,—a number of horses probably never seen together, or, at least, only once or twice in the world's history.

The reviewer points to Sir William Armstrong as the first inventor of water-power engines. Engines on this principle are described in that venerable work, "Belidor's Architecture Hydraulique;" and it is stated therein, that those engines were built in 1731. The reviewer appears to be unaware, that piston and cylinder engines driven by gunpowder have been used with some success, although the plan failed to dethrone King Steam. We are quietly informed that "the invention of a practical (steam) engine is hardly more than eighty years old," although Watt took his famous condenser patent in 1769, and although Newcomen's engine was in use for seventy years previously to that date. So far from Newcomen's engine being quite "unpractical," there are actually some old specimens yet extant and at work in out-of-the-way parts of the country where fuel is cheap.

The canvas, as a whole, might form an interesting picture, although the separate figures were marred by incorrect drawing. But this picture is not merely badly arranged, but many important figures are entirely left out. We thus find no mention of the application of steam to the farm. Steam ploughing is now effecting the most important changes not merely in the productive power of the farm labourer, but in the productive power of the farm itself. No mention is made of the Bessemer process of making steel, which is said by a good judge, M. Michel Chevalier, to be "*Pour la puissance du genre humain et pour son bien-être d'une autre portée que la découverte des mines d'or de la Californie et de l'Australie.*" We see no mention of the late application of engineering,—the sluice system,—to the working of Californian gold; no mention of the pneumatic despatch, although the plan will be, very likely, applied to underground railways; no mention of the application of engineering to warfare, in the shape of the Whitworth, Armstrong, and other rifled guns; of the new rifles; and of the use and influences of railroads on warfare.

What are the philosophical reflections of the reviewer on the extraordinary steps in material progress that he could not fail to notice? He begins his paper with a definition of man "as a road-making animal;" a definition which, he carefully informs us, "has *not* yet found its way into the books." He might just as well define man as a "shoe-making animal,"—in fact, the latter would appear to be the best "definition." Is it not well known, by the bye, that the only roads in America before its colonization by the white man were the tracks formed by the buffalo herds on their way to the "salt licks?" His paper is really but a piece of patch-work, formed out of his common-place book.

And yet, what a splendid subject for a pen worthy of the theme!—to show that the principal steps in civilization were effected by successive subjugations of mechanical power to labour; from the use of beasts of burden to the employment of slaves by a dominant race; until, at last, slaves are completely, and animals partially, superseded by the powers of nature;—to trace the influence of invention on modern civilization; to point to gunpowder beating down the castle walls, and the costly armour of their lords; the printing-press destroying the monkish thraldom of the Middle Ages; the magnetic needle discovering a new world; the immense extension in the powers of production and locomotion by means of the steam-engine.

Last year's Exhibition, though so faultily arranged, might have been one immense study for a mind really desiring to trace the "Progress of Engineering;" but its teachings have been neglected in the article to which we have thought it necessary to point attention.

* This article was in type before the issue of our last number.

ART WORKMANSHIP AT THE SOCIETY OF ARTS.

IN reply to the offer of premiums made by the Society of Arts some time ago seventy works have been submitted, many of them very good, and are now under adjudication. The number of works sent in is thus divided:—

1. *Modelling in Terra Cotta, Plaster, or Wax.*—(*a*) The human figure in bas relief, after Raffaelle's design of the "Three Graces."—23.

(*b*) Ornament in bas relief, after arabesques by Lucas van Leyden, 1528.—8.

2. *Repoussé Work in any Metal.*—(*a*) The human figure as a bas-relief, after Raffaelle's "Three Graces."—3.

(*b*). Ornament, after a Flemish salver in the South Kensington Museum, date about 1670, No. 1153.—1.

3. *Hammered Work, in Iron, Brass, or Copper.*—Ornament, after an iron German arabesque, about 1520, in the South Kensington Museum, No. 2450.—2.

4. *Carving in Ivory.*—The human figure in bas relief, after a terra cotta ascribed to Luca della Robbia, about 1420, in the South Kensington Museum, No. 7610.—4.

5. *Chasing in Metal.*—(*a*) The human figure, after a reduced copy of Gibson's "Psyche."—6.

(*b*) Ornament, after a bronze plaque in the South Kensington Museum, No. 1217.—11.

6. *Enamel Painting on Metal, Copper, or Gold.*—(*b*) Ornament in Grisaille, after a German arabesque, 16th century.—1.

7. *Painting on Porcelain.*—(*a*) The human figure, after Raffaelle's "Boy bearing Doves," in the cartoon of the "Beautiful Gate."—5.

(*b*) Ornament, after arabesques by Lucas Van Leyden, 1528, and coloured according to the taste of the painter.—3.

8. *Inlays in Wood* (*Marquetry, or Buhl*), *Ivory, or Metal.*—(*b*) Ornament, after a majolica plate in the South Kensington Museum, 1490, No. 1671.—2.

9. *Engraving on Glass.*—None.

10. *Embroidery.*—Ornament, after a German example in the Green Vaults at Dresden.—1.

At present the works are undistinguished by mottoes or names, so that reference to any of them in words cannot be made. These, however, will be supplied, and a catalogue is in preparation.

A committee has been appointed by the council to arrange the terms of a fresh competition. It held its first meeting on Tuesday last; Mr. W. Hawes (in the chair), Mr. H. Cole, Mr. Redgrave, Mr. M. Nelson, Mr. Godwin, Mr. Crace, Mr. Stevens, Mr. John Webbe, Mr. Le Neve Foster, and others being present, when various preliminaries were agreed on.

THE GRAPHIC SOCIETY.—The first *conversazione* of the new session, which is the 31st, will be held on Wednesday, the 9th, at University College, as usual.

QUALITIES OF STONE IN THE ISLAND OF PORTLAND.

UNDER the direction of the Inspector-General of Fortifications, Mr. F. A. Abel, F.R.S., some time ago made an examination into the comparative qualities and fitness for building purposes, of samples of stone from different quarries in the Island of Portland. We are glad to be able to lay the results before our readers:—

A collection of twenty-eight specimens, representing the stone obtained from different quarries and beds on the Island of Portland has been submitted—

1. To a careful comparative inspection.
2. To experiments having for their object the attainment of comparative data, regarding
   a. The chemical composition of the stones.
   b. Their strength and power of resisting wear from mechanical causes.
   c. Their porosity, or absorbent power, and consequent susceptibility to the destructive effects, mechanical and chemical, of atmospheric agents.

As regards chemical composition, the differences, indicated by the analysis of the specimens of stone from different quarries, are only of a trifling description, and not calculated to influence in any definite manner the comparative durability of the different varieties of stone.

The properties which it is considered should, apart from the questions of chemical composition and facility of working in the mason's hands, be combined in a building stone, capable of resisting effectually the fullest exposure to atmospheric influences, are—

1. Compactness of structure, or a low degree of porosity.
2. Strength and hardness (to the greatest extent compatible with the working of the stone).
3. Uniformity of structure.

The results of my experiments show that all the superior descriptions of "*Whit-bed*" stone combine strength and compactness in a considerably higher degree than the varieties of "*Base-bed*" stone. Some kinds of the "*Whit-bed*" stone, however (*i.e.* those from the New Maggot and Inmosthay quarries), though ranking with the best as regards strength, exhibit a greater degree of porosity. Again, other "*Whit-bed*" stones (from Old Maggot, Waycroft, and Independent quarries), exhibit but little superiority, in point either of strength or compactness, over the generality of the "*Base-bed*" stones; and are, indeed, inferior to the best "*Base-bed*" variety.

The "*Base-bed*" stones are, undoubtedly, more generally uniform in structure than those of the "*Whit-bed;*" this being mainly due to the comparative freedom of the former from distinct petrifactions. Though such petrifactions were shown, by the results of experiments, to impart, in many instances, great additional strength to the stone, they frequently give rise, by their existence, to cavities, sometimes of considerable size, which not only serve to weaken those particular portions of the stone, but may also, if they exist in proximity to exposed surfaces of a block of stone, promote its partial disintegration by the action of frost.

Greater care is, therefore, unquestionably required in the selection of "*Whit-bed*" stone than need be employed in the case of all the better varieties of "*Base-bed*" stone.

I append to this memorandum, in a tabular form, a statement of the comparative strength and compactness of the different varieties of stone, as represented by the specimens experimented upon, together with a description of the peculiarities noted, on examination of the specimens, many of which have an important bearing upon the results obtained in the experiments instituted with the blocks.*

The results of my experiments lead me to the following conclusions, regarding the comparative merits of the various descriptions of Portland stone in question, for building purposes.

The *Roach* stone from "*War Department*" *Quarry* is an invaluable stone for *external* work, in localities where very considerable strength, and power of resisting mechanical wear are required (*e.g.*, in connexion with those portions of work which may become exposed to the continual abrasive action of water).

The *rough* "*Whit-bed*" stone from *Admiralty Quarry* (as represented by specimens 1 and 2, see table), is also a highly valuable stone for external work, of a similar kind, where great strength is required, and particularly where the numerous irregularities in the above *Roach stone* may be objectionable.

The following varieties are all well calculated for *external* work, and I consider that the order of their relative value is as follows:—

1. Stone from *War Department Quarry, Vern Hill.*
   "*Whit-bed*" stone, *Admiralty Quarry.*
2. "*Whit-bed*" stone, *New Maggot Quarry.*
   "*Base-bed*" stone, *Admiralty Quarry.*
   (This may be considered quite equal in quality to Whit-bed stone.)
   "*Whit-bed*" stone, *Inmosthay Quarry.*
   (Particularly adapted from its texture and uniformity for ornamental work.)
3. Whit-bed stone, *Old Maggot Quarry.*
   (*a*) Marked L I.
   (*b*) Marked I T and I E.

For *internal* work, the following rank highest, on account of uniformity and comparative strength:—

"*Base bed* stone, *Old Maggot I T.*
"*Whit-bed*" stone, *Independent Quarry.*
"*Base-bed*" stone, *Waycroft Quarry.*
"*Base-bed*" stone, *New Maggot Quarry.*

The following are inferior to those just named, in texture and uniformity:—

"*Whit-bed*" stone, *Waycroft Quarry.*
"*Base-bed*" stone, *Old Maggot Quarry I E.*
"*Base-bed*" stone, *Inmosthay Quarry.*

The "*Base-bed*" stone from *Old Maggot Quarry* marked L I, and that from *Independent Quarry*, are of low quality, as compared with the remainder; and no reliance can be placed on the durability of the *Roach stone* from *Independent Quarry*, judging from the specimen received.

I may observe, that no definite conclusion can be drawn, from the comparative properties of the specimens of stone from one and the same locality (quarried at different periods of time), regarding the influence exerted by exposure, after quarrying, upon the quality of the stone.

In the instance of the example of *rough* "*Whit-bed*" stones from *Admiralty Quarry*, the specimen quarried last autumn was decidedly the strongest (that quarried three years ago differed altogether in character from the other specimens). The specimens of "*Whit-bed*" stone from the *Admiralty Quarry* were very much alike in strength, there being a slight difference in favour of that quarried three years ago. In the "*Base-bed*" specimens, from the same quarry, the strength was also found to increase somewhat with the age of the stone; but of the specimens from the *War Department Quarry*, the one most recently quarried was considerably stronger than the others. Here again, however, the difference must be ascribed to a difference in structure: the other two specimens (quarried last autumn and three years ago) were in all respects alike.

On the whole, the evidence may be considered as a little in favour of the opinion, that an improvement in the strength of the stone is effected, to some extent, by seasoning.

F. A. ABEL.

Woolwich.

* These experiments consisted, chiefly, of careful determinations:—
1. Of the comparative absorbent power exhibited, under precisely similar conditions, by cubes of the different stones; and
2. Of the weight sustained, up to the point of fracture (*i.e.* the crushing weights), by accurately cut cubes of the stones. These cubes of each variety of stone were crushed, and the conclusions, as to the comparative strength of the stones, were drawn from the mean results thus arrived at. These crushing experiments were carried out with the well-known American mechanical testing machine.—F. A. A.

TABLE

Showing the comparative Orders of Strength and Compactness of Samples of Stone from different Quarries in the Island of Portland.

Description of Stone.	Order of Compactness.	Order of Strength.	Peculiar Features of each Stone.
ROACH.			
War Department, Vern Hill Quarry	One (The compactness of these is about as high again as those next in order.)	One	Light coloured, very hard, and compact, one of the heaviest stones of the series; its weight being very much greater than that of the *Roach* from Independent Quarry. Its strength is not uniform, as it contains numerous shells and cavities.
ROUGH WHIT-BED. *Admiralty Quarry.*			
Quarried recently	Two	Two	Rough, but compact; contains numerous small shells.
Ditto last autumn	Two	One	Containing only few cavities.
Ditto three years ago	Between Six and Seven.	Between Four and Five	Very rough and irregular, containing large shells; differing, therefore, greatly from the other samples from Admiralty Quarry.
War Department Quarry, Vern Hill. (Bed not specified, evidently WHIT-BED.)			
Quarried recently	Three	One	Hard, and very compact; containing, however, some large cavities.
Ditto last autumn	Four	Three	A very hard light-coloured stone, containing numerous pin-hole cavities.
Ditto three years ago	Four	Three	Similar to No. 1 from this quarry, though somewhat less compact, apparently free from cavities.
WHIT-BED. *Admiralty Quarry.*			
Quarried recently	Four	Three	All these samples very similar. Light-coloured compact stones, containing a few small shells. Apparently free from cavities.
Ditto last autumn	Four	Three	
Ditto three years ago	Four	Two	
Inmosthay Quarry	Six	One	Fine-grain, moderately compact, almost destitute of shells; one of the most uniform of the Whit-bed series.
New Maggot Quarry	Five	Two	Light-coloured, compact, and very uniform.
BASE-BED. *Admiralty Quarry.*			
Quarried recently	Four	Three	Nos. 1 and 3 are similar; light-coloured, compact, and very uniform. No. 2 is somewhat darker, and exhibits patches of closer texture. They exhibit more indications of shells than any other Base-bed stones; and are, in appearance and properties, very similar indeed to Whit-bed stone,
Ditto last autumn		Two	
Ditto three years ago		Two	
WHIT-BED. *Old Maggot Quarry.*			
marked I T	Between Six and Seven	Four	Nos. 1 and 3 are much rougher in texture than No. 2, which is a little superior to them in compactness, but is somewhat less uniform.
„ L I	Six	Three	
„ I E	Between Six and Seven	Four	
Waycroft Quarry	Seven	Four	Rough in texture and porous.
Independent Quarry	Between Seven and Eight	Four	Fine grained, but porous.
BASE-BED. *Old Maggot Quarry.*			
marked I T	Seven	Three	I T is uniform, but I E exhibits faint bands of stratification. L I is about the lowest quality of Base-bed stone examined. It is very soft and porous.
„ I E	Seven	Five	
„ L I	Ten	Six	
Waycroft Quarry	Eight	Four	Light-coloured and uniform.
Inmosthay Quarry	Eight	Four	Exhibits considerable want of uniformity.
New Maggot Quarry	Nine	Three	Very uniform; similar to I T Old Maggot Quarry, though more porous.
Independent Quarry	Nine	Six	A rough very porous stone, exhibiting considerable difference of strength in different portions; to be ascribed to the fossil markings observed here and there.
ROACH.			
Independent Quarry	....	....	A very inferior description of stone. Full of large loose petrifactions and cavities of considerable size. The strength of the most compact portion was only about half that of the weakest of the above stones.

Through the kindness of Professor Abel, we are enabled to add the following statement of the weights actually sustained by 2-inch cubes up to crushing:—

War Department Quarry, Vern Hill ..	14795·8	lb.
Inmosthay Quarry, Whit-bed	14591·8	,,
Admiralty Quarry, Rough Whit-bed ..	14387·7	,,
,, ,, Whit bed.....	13979·5	,,
,, ,, Base-bed.....	13775·0	,,
New Maggot Quarry, Whit-bed	12857·1	,,
Old Maggot Quarry, L I Whit-bed	12244·8	,,
Independent Quarry, Whit-bed	11632·6	,,
Old Maggot Quarry, I T Base-bed	12857·1	,,
,, ,, L I Base-bed	8163·2	,,
Waycroft Quarry, Base-bed	11836·7	,,

The cubes were crushed between perfectly smooth lead surfaces.

SUBJECTS FOR PREMIUMS, SOCIETY OF ARTS, 1863-64.

STOCK PRIZE.

Under the will of John Stock, funds are bequeathed for the offer of a medal for the encouragement of drawing, sculpture, and architecture.

Shell Cameo. — On the present occasion the Society's medal is offered to female artists, for the best cameo designed and executed on any of the shells ordinarily used for that purpose.

DENTON PRIZES.

Cottages for the Labouring Classes. — Two prizes, of 25*l.* each, are placed in the hands of the council by Mr. J. Bailey Denton, to which are added the Society's medals, to be offered for the most approved designs for cottages, to be built singly or in pairs, at a cost not exceeding 100*l.* each. One prize is to be competed for by members of the Architectural Association, and the other is open to general competition.

Detailed particulars have been issued, and may be had on application to the Secretary.

The plans, drawings, and specifications, must be sent to the Society's house, not later than the 1st January, 1864.

ART WORKMANSHIP AND WOOD CARVING EXHIBITION AND PRIZES.

Prizes are offered by the Society in these subjects, and an exhibition will take place in 1864.

Special lists relative to this competition will be issued.

GENERAL LIST.

The Society's medals will be awarded for communications or discoveries in relation to the following amongst other subjects:—

Goldsmiths' Work. — For the best essay on ancient goldsmiths' work.

Bronzes.—For the best essay on the manufacture and casting of bronzes, and on bronze washes.

Moulds for Metal Casting.—For the production of a material to be used in the formation of moulds for casting bronzes and other molten metals, so as to enable the casts to be produced without seams.

Pigments.—For an account of the various pigments used in the fine arts, with suggestions for the introduction of new and improved substances.

Substitute for Wood Blocks.—For the discovery of a substitute for the blocks used by wood-engravers, so as to supersede the necessity of uniting several pieces of wood.

Photographs on Enamel.—For the best portrait obtained photographically and burnt in in enamel.

Photographs on China.—For the production of a dessert or other service, in china or earthenware, ornamented by means of photography and burnt in from an impression obtained, either directly from the negative, or from a transfer from a metal plate obtained directly from the photograph.

Reproducing Designs for Printing.—For a rapid means of reproducing artistic designs or sketches, for surface printing by machinery, such process to provide for lowering portions of the work to fit it for steam printing.

Green without Arsenic.—For the manufacture of a brilliant green colour, not containing arsenic, copper, or other poisonous materials.

Artificial Stone and Terra Cotta. — For an account of the various artificial stones and terra cottas introduced and employed for purposes of construction, stating their properties, advantages, and imperfections, and their relative cost.

Protecting Iron. — For the invention of an efficient method of protecting iron from the action of air and water, applicable to the various forms in which iron is used as a building material generally, and also to iron ships and armour-plated vessels.

Elastic Tubing.—For an elastic material for tubing suited to the conveyance of gas, and not liable to be affected by alterations in temperature, or to be acted upon by the gas itself.

Colour for Slate.—For the preparation of light colours to be used in enamelling or japanning slate, which will stand the action of the heat from the fire without blistering or discoloration, and be sufficiently hard to resist scratches.

Coating Walls.—For the production of a cheap white enamel-like composition for the interior walls, &c., of houses, applicable to all ordinary surfaces, easily cleansed, and not liable to crumble or chip, and capable of being tinted.

Substitute for Turpentine.—For a new and efficient substitute for turpentine applicable to the manufacture of varnishes, and to purposes for which turpentine is now ordinarily applied.

Rollers for Printing Paper-hangings.—For a composition for feeding rollers for printing paper-hangings by cylinder machinery, similar in consistency and texture to the gelatine rollers used in letter-press printing, but adapted for working in water-colours.

Paperhangings coloured in the Pulp.— For the manufacture of papers from the coloured pulp, bearing upon them designs, either coloured or white, discharged after the manner of calico-printing.

Emigrants' Dwellings.—For the best essay (for the information of emigrants proceeding to new settlements) descriptive of the means of treating existing natural products in any locality, such as earth, shells, chalks and limestones, woods, barks, grasses, &c., and applying them in the construction of dwellings. Diagrams and illustrations of the methods of applying materials should be given.

THE PROJECTED RAILWAY AND OTHER WORKS.

Among the Parliamentary notices is one for the construction of a railway bridge across the Frith of Forth, to facilitate the communication between the Eastern Lowlands of Scotland and the north. The point thought of to construct a bridge at first was Queensferry, where an island divides the strait into two, but the Admiralty object to any structure which would prevent their ships passing to the anchorage above, while the depth of the water is also another reason why the only bridge permissible there should be a suspension-bridge. The span of such a bridge, however, would exceed anything hitherto known. The point fixed upon is four miles above Queensferry, and at which the Edinburgh and Glasgow Railway on the south side, and the Dunfermline railways on the north side of the Frith, run nearest to the respective shores. Locally the point is known, on the south side, as Pardovan, and on the north side as Charleston. This new bridge is proposed to be constructed by an independent company, who will afford running powers and facilities to all the railway companies choosing to make use of it. The bridge, which will be built on about fifty piers, will necessarily be of great length—nearly as long, it is said, as the Victoria Bridge across the St. Lawrence. The cost, however, is not estimated to exceed half a million; whilst the Victoria Bridge, which had to be exported, cost nearly a million and a half. It is anticipated that the work will be completed in less than three years from its commencement.

The total number of notices for all kinds of new undertakings amounts this session to 450, being an increase of 100 on all preceding sessions; and of this number nearly 300 are for new railways, branches, amalgamations, and extensions. Among the railway works is a Victoria Station and Thames Embankment underground railway, running by Westminster Bridge to Blackfriars Bridge. There is also a London Low-level Railway project, with six distinct lines running underground from Victoria-street to Dowgate-hill *viâ* the Thames Embankment; from Westminster to Charing-cross *viâ* Great Scotland-yard; from Great Scotland-yard to the Charing-cross Railway Bridge; from the first-mentioned to the Metropolitan Underground at Farringdon-street; from the one joining the Metropolitan, and running under Ludgate-hill, Printing-house-square, and New Bridge-street, Blackfriars, to St. Bride's and St. Ann's, Blackfriars; lastly, from the first-named line to Cripplegate and the Finsbury extension line of the Metropolitan, *viâ* King William-street, London Bridge, and Fenchurch-street. Moreover, there is a Blackfriars Roadway and Railway project, with an embankment from the Inner Temple, at the termination of the authorized embankment, to Blackfriars Bridge, with roadway above and railway under the roadway, &c. Another project is the Tower subway, under the Thames from Irongate-stairs to Horsleydown Old-stairs. The Metropolitan Board of Works are applying for additional powers in reference to the Southern Embankment of the Thames at Stangate, in Lambeth, for the altering, widening, and improvement of the approaches to Palace New-road, and of Stangate, and for other purposes. The City corporation have also advertised their intention of applying to Parliament for an Act to carry out the Holborn Valley improvements.

OPENING OF NEW WING OF RADCLIFFE INFIRMARY, OXFORD.

At a special court of the governors of the Radcliffe Infirmary, the building committee has formally handed over possession of the south wing, which has been erected at a cost of 6,000*l.*

The out-patients will enter the grounds of the infirmary by the ordinary lodge, as now, under the observation of the porter. The outer door leads into a lobby, which will be provided with a drinking fountain. Opening from the lobby are retiring-places for each sex, and a bath-room with a lavatory. The out-patients' hall, at the north-eastern end of the new wing, is 71 feet in length, 25 feet in width, and about 20 feet average height. There are six plate-glass windows to the south, hung on sashes, opening above and below, and reaching to nearly the top of the wall. To the east, west, and north are circular lights, made to open. In the ceiling are fourteen trap-doors, opening and shutting by a simple arrangement. The roof is pierced by ventilators on the north and south sides, and at both ends. The hall is warmed by a large open fire-place, and by hot-water pipes on the low-pressure system. On the north and west sides of the hall are six rooms placed in pairs for the medical staff, and for three physicians and three surgeons.

The clinical professor's room opens into the shop corridor as well as into the hall. It has twice the cubical contents of the other medical rooms.

The accident ward, at the south-western end of the new wing, represents a ward unit on the pavilion principle; to which is added, for convenience, a casualty-room for the first reception of accidents, and for minor surgical casualties. The ward unit comprises the ward itself, with closets, bath-room, nurses' room, scullery, nurses' closet, and other lesser appliances. The ward is 78 feet in length, by 26 feet 6 inches in width, and 18 feet in height. Twenty bed-places are fitted up, giving to each bed 1,860 cubic feet of air. There are six windows on the south, with a similar and opposite set on the north, excepting only the second from the entrance, which is replaced by a fire-place. The sashes are of oak, with plate-glass ¼ inch thick, opening both at the top and bottom. To prevent draughts either through the window-frames or from the cold outer glass, glass frames have been provided resting on the window-sill, 2 feet 4 inches in height, and of the same width as the window, which will in effect make the lower part of the windows double; and, if required, these frames can be raised to any height hereafter. Ventilation does not wholly depend on the windows. In the ceiling, between each truss of the roof, is a hinged trap-door, readily opened and shut: all together affording 72 superficial square feet of air-passage into the roof space.

The roof is pierced north and south, and east and west, by eight opposed open ventilators for the exit of foul and introduction of fresh air. Besides, in the centre of the floor, between the feet of the beds, are six apertures, which can be opened or closed, communicating with a chamber in a cellar east of the ward. This chamber is supplied with fresh air by an aperture, 3 feet by 2 feet, and may be heated by the furnace which heats the out-patients' hall and the shop corridor. The air flue can be disconnected at will. In addition to these sources of air and means for promoting its due circulation, there are in the piers between the windows, air flues with regulating valves, which open through the wall into the outer air. There are two open fireplaces, one on the north side replacing a north window, one at the west between the west windows. In the mantelpiece there is an aperture leading to the ventilating shaft which surrounds the flue. This shaft is constructed of Jennings's patent flue-pipes. The ward is built over an excavated cellar, 9 feet deep. The joists are plastered on the under surface, with pugging between them. The flooring is of 1-inch deal, with ¾-inch wainscot-oak laid upon it; the latter dowelled and side-nailed. A slight current of air passes between the plastering and the pugging, and also between the pugging and the double floor.

The spaces on the floor under each bed are covered with white glazed Minton's tiles, with a glazed red border. These tiles are bedded in Portland cement, which rests on a bed of concrete laid in between the joists. Any moisture therefore spilt under the bed will lie upon the tiles, and may easily be wiped off the polished surface. Between the bed-places the floor is, as elsewhere, of wainscot, the tiles not projecting beyond the edge of an ordinary bed, that they may not be stepped on by patients leaving their beds.

Two bed-spaces are placed between each window, and every patient is separated from his neighbour by 3 feet on one side, and by 4 feet 2 inches on the other, and has a window at the head of his bed. From foot to foot of the beds on opposite sides are 13 feet 6 inches, allowing 6 feet 6 inches for the length of a bed.

The walls and ceiling are of cement, polished so as to prevent any noisome exhalations from lodging there. The tie-beams are of varnished deal. There are no ornaments or mouldings on which dust can rest.

Besides the north and south windows there are two west windows, one on either side of the fireplace. Every patient in the ward can look, if he will, down the garden in summer, and in winter upon the open fire.

At the south-west angle is a bath-room and a lavatory, also lined with polished cement. At the north-west there is a double closet, separated by a passage, and a urinal, all thoroughly ventilated. The bath-room and the closets are separated from the ward by swing doors, and outside these is a warm-air flue from the hot-air apparatus. There are provisions for water supply on the self-acting process. The nurse's room to the east of the ward looks down the ward, but does not open into it. Beyond the nurse's room is a scullery, with a small room for occasional cooking.

The drains from the new wing are, of course, external to the building; that is, in the case of every closet they are detached from the main walls, and also leave the building at the nearest convenient point. They are made of 4-inch glazed pipes, jointed with Portland cement, and bedded in clay. They unite with a 9-inch drain, similarly laid, and this passes into the city system to the west of the infirmary. Man-holes are provided at two points of the main drain; and at the same points charcoal ventilating shafts will be added, according to a plan recommended by Mr. Rawlinson, engineer to the Health Department of the Privy Council.

A separate morgue, an inspection-room, and a small waiting-room for the friends have been fitted up in a convenient spot near the entrance.

The cost of the works up to the present time is calculated at about 5,350*l.*; to which must be added 720*l.* disbursed by the former committee. The total sum spent, therefore, is about 6,070*l.*, against 6,994*l.* total receipts.

The design for the new buildings was obtained in competition, in the autumn of 1861; Mr. E. G. Bruton being the successful competitor. Mr. W. C. C. Bramwell was subsequently associated with Mr. Bruton in the direction and superintendence of the work, which was done by Mr. Joseph Castle, the contractor.

BETHNAL GREEN.

OUT of evil good often comes; and we hope that this may be the case at Bethnal-green, and that the mischief which has been exposed will be of advantage not only to the poor of this parish, but to those resident in other districts. The shame which has fallen on Bethnal-green in consequence of the bad sanitary conditions which have been allowed to exist there, has moved the authorities of other districts to increased exertion, — at any rate, for the present.

After repudiating the need of sanitary improvement, and treating with doubt and insult those who brought cases of wilful poisoning before the coroner's inquest, the vestry of Bethnal-green saw their mistake, and have begun to consider the best means of removing the nuisances which exist in that parish. After what has passed, we looked doubtfully at the ability of the vestry to deliberate on sanitary matters in a useful way. However it has been resolved that a chief inspector of nuisances should be appointed, at a salary of 80*l.* a year. If a chief inspector be paid only a trifle over 30*s.* a week,—a sum less than the wages of a journeyman stonemason or bricklayer,—the income of the other inspector must be much less than that of the chief; and it becomes a question well worth consideration if it can be expected that men of the right kind can be found to fill, in an effective and independent manner, the duties of this responsible office. In fact, it is no question at all.

In Bethnal-green district there are 760 statute acres: the number of inhabited houses is 14,812; and the population 104,924, consisting for the most part of very poor people, many of whom live in dilapidated, undrained houses, which require the greatest care. It is, therefore, perfectly ridiculous to suppose that even two men of the most able and energetic character could, when so much is to be done, effect any considerable amount of real good. In order to do real good, houses should be inspected time after time. When an order has been made for improvement, watch should be kept that it is thoroughly carried out; and, as regards dilapidation and dirt, care should be taken, after a place has been put in good condition, that it is not allowed to lapse into its original state. But we feel certain that no effectual benefit will be derived from the inspection of parish officers. In connexion with the city of London, which contains many parishes, the sanitary inspection of the whole is under a central authority, who acts in a more independent manner than do the authorities of particular districts. But in the City limits, where places of business, such as banks, warehouses, the houses of tradesmen, &c., do not contain so large an extent of poor population requiring sanitary attention as does Bethnal-green, Dr. Letheby has found it necessary to have the assistance of five general inspectors,—one common lodging inspector; two inspectors of cow-houses and markets; one whose duties seem to have been varied; and another whose duty it is to see that all orders are carried out. By means of this staff, under the general supervision of Dr. Letheby, during the last year, within the City 9,000 inspections of houses were made. Nearly 170 houses were inspected every week. Notwithstanding, there still remains a great deal to be done in the City.

At Bethnal-green, it has also been agreed, that the Public Nuisance Removal Committee be called the Sanitary Cammittee, and be composed of the whole vestry; that for the purposes of general inspection, the committee shall be divided into sections, and that each ward be under the members representing it. This arrangement, if properly carried out, would be of much advantage. We have seen so many instances, however, of the failure of amateur sanitary inspection, that we have but little faith in it: for a short time there is activity and zeal, which generally soon lapses into indifference. It is, however, very satisfactory to hear, that a loan of 7,000*l.* for drainage purposes, has been negotiated with an insurance company, and that the surveyors are to be instructed to compel owners of property to drain their premises into the main sewer, if no drainage exist into any other sewer. These last-named resolutions are steps in the right direction.

In consequence of the death of another child in Hollybush-gardens, an inquest has been held, and it is most desirable that this plan should be continued in connexion with all deaths which are suspected to result from sanitary neglect. Several residents of Hollybush-place and gardens complained of the foul condition of the air, and especially of the stench which came from Mr. Costello's cow-house. Mr. Brotherton, the surgeon who had attended the deceased and two others of the children who had died from fever, notices that they had recovered from that, and then got a mild dropsy, which, in these instances, terminated in death. In the case especially under notice, the boy, six years of age, had recovered from the scarlet fever, and it was advised by the medical attendant that he should be removed. This was done; but the boy was brought home the next day, and he was soon after stricken with typhoid fever, and died in the course of twenty-four hours. Typhus had been fatal in that house some years before.

When we reported a month or two ago on the state of Hollybush-place, we expressed a strong opinion that, bad as the drainage was, the evil was largely increased by the cow-shed, and this opinion is confirmed by the evidence which was given by Dr. Letheby at the inquest. This gentleman said that, "the house in which the deaths took place was small and rather dirty. There was a strong ammoniacal smell in the various rooms from the adjoining cow-house. He was informed that odour was at times almost unendurable, and that it varied in character. Sometimes it seemed to arise from rancid grains, and sometimes from rotten dung. The rooms were very close and ill ventilated. They could only be ventilated over the shed. The latter was immediately behind the house, and was only separated from it by a shed, a few feet wide. The closet was very clean, and the water abundant, though liable to receive the effluvium from the cow-house, from which it was evident the foul smells had come principally." Dr. Letheby inspected the cow-house, and found that it was cleansed down three times a day, and that the cows were healthy. He then described the deep and uncovered grain and manure pits, from which exhalations escaped. In the houses adjoining the sheds there were the most emphatic complaints at this nuisance, and at times the odours were absolutely insupportable. "Besides which the annoyance from the flies and other insects (telltales), which swarmed, was most distressing. Such a cow-shed, with every care, could hardly fail to be a nuisance to a neighbour, and would require inspection by a proper officer at least once a fortnight. He would add that, as the habits of the animals, as well as the food made use of, were most unnatural, the milk they yielded was most unnatural."

The jury in this case returned the following verdict:—"That the deceased died from typhoid fever, accelerated by bad air and bad drainage; and the jury recommend that the grain-bins and manure-tanks, and water-butts should be covered over; that there should be a numerous staff of sanitary inspectors employed by the parish authorities; and the authorities be requested to communicate with local authorities, and the Secretary of State."

THE WEDGWOOD INSTITUTE COMPETITION.

WE gave the judges' report on the designs sent in our last. The names of the successful competitors have since been declared, and are as follows:—

1st premium, Robert Edgar and John Kipling; 2nd premium, Mr. De Ville; 3rd premium, John Ladds; 4th premium, Edward Power. The following obtained honourable mention:—Samuel Cuthbert Rogers, James Lessels, and Harry Green. Mr. R. Edgar is an architect, late of Stoke; and Mr. J. Kipling is a modeller at Messrs. Pinder, Bourne, & Hope's manufactory, Burslem.

The committee met in the Town Hall last week, and made arrangements for the exhibition of the designs, and for seeking subscriptions, so as to ensure their proceeding with the work with as little delay as possible.

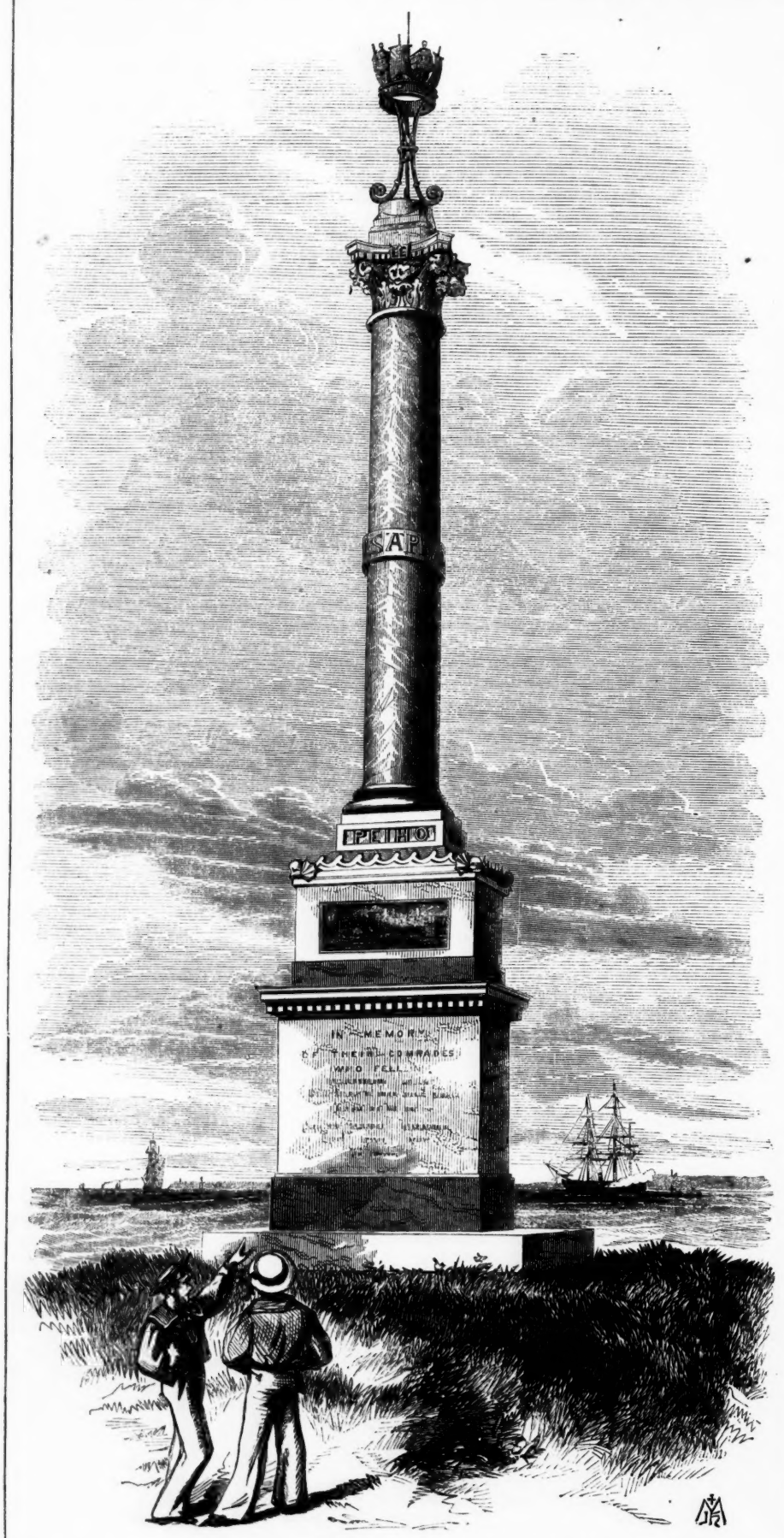
SIR,—Will you allow me, in reference to that portion of the judges' report which says, concerning my design, "the combination of cornice and window in the upper floor is decidedly inconvenient,"—to state that the upper floor has no windows; but in the inter-brackets of the cornice there are *panels of blue bricks*, and they must have been taken for *windows*. I would not thus trouble you did I not feel that, had windows occupied the position of the panels, the combination (considering the internal levels) would have been *atrocious*.

THE AUTHOR OF DESIGN MARKED WITH THE HEARTSEASE.

WHY SHOULD THE NEW PALACE OF JUSTICE BE DELAYED?

IT is so far satisfactory to notice that the Lord Chancellor has, on the earnest appeal of several members of the bar, given instruction for the alteration of some parts of the Bankruptcy Court, in Basinghall-street, during the remodelling of that inconvenient, and, for its purpose, most unfit building. We fear, however, that after all, both counsel, clients, judges, and every one concerned, will have but a sorry time of it; and that when a large sum has been expended upon the general alterations, it will be found that the premises are still insufficient for the proper and decorous management of the extensive business of this court. As regards the great building for the new courts of justice, the money for the purpose is ready, there is no difficulty respecting the site, and the design has been determined upon. Sooner or later this work must be carried out. Why, then, when all the circumstances are favourable, delay, and continue, year after year, to spend money on alterations which will for the most part be wasted? When looking into some of the apartments of the Bankruptcy Court not long since, we were disagreeably conscious that in their densely crowded and disorderly condition, the air, particularly on a damp day, is not much purer or better than that to be met with in the hovels of Bethnal-green.

ST. PATRICK'S CATHEDRAL, DUBLIN. — Up to the present time, Mr. L. B. Guinness, the brewer, has expended 110,000*l.* in restoring this cathedral. The total cost of the restoration, which will be wholly defrayed by Mr. Guinness, will probably amount to 150,000*l.*



THE CHESAPEAKE MEMORIAL, CLARENCE ESPLANADE, PORTSMOUTH.

MESSRS. WILLSON & NICHOLL, ARCHITECTS.

THE "CHESAPEAKE" MEMORIAL, PORTSMOUTH.

We have engraved a view of the Memorial column which has been erected on the Clarence Esplanade by Vice-Admiral Sir J. Hope, K.C.B., and the officers and ship's company of the *Chesapeake*. The memorial consists of a column, of a free Romanesque treatment, with plinth and sub-plinth resting on a pedestal, the summit being ornamented with a naval crown of gilt bronze, elevated on a tripod, also of bronze. The height of the monument, from the top of the raised mound to the summit of the crown, is 25 feet. The sculptured capital, the base and band of the column, the sub-plinth, and the die of the pedestal and the step, are of Portland stone. The base of the tripod and the cornice and plinth to the pedestal are of the grey Forest of Dean stone. The shaft of the column is in red Aberdeen granite, polished, and the plinth is of grey granite, also polished. The plinth has on it a representation in bronze of the attack on the Taku forts. The sculptor who executed this portion of the work was Mr. T. Phyffers. The north face of the pedestal bears the following inscription:—

IN MEMORY
OF THEIR COMRADES,
WHO FELL IN BATTLE,
OR DIED FROM DISEASE AND ACCIDENT,
DURING AN EVENTFUL COMMISSION OF FOUR YEARS,
THIS COLUMN WAS RAISED
BY
VICE-ADMIRAL SIR JAMES HOPE, K.C.B.,
THE CAPTAIN, OFFICERS, AND
SHIP'S COMPANY,
OF
H.M.S. "CHESAPEAKE."
1862.

The central band on the column is of Portland stone, with the word "Chesapeake," in ornamental letters, carved thereon; and on the moulded base of Portland stone standing on the plinth, are the words Peiho, Calcutta, Jeddah, and Pekin, raised on each face. The stonework was executed by Mr. G. P. White, of London, from the design and under the superintendence of Messrs. Willson & Nicholl, architects.

THE CLARENCE HOTEL, DOVER.

This edifice, of which we give an illustration, has been undertaken by the directors of the Clarence Hotel Company, in Dover, to accommodate the increased demand which has arisen in that favourite watering-place.

The site purchased by the company is freehold, in the centre of the most fashionable part of the town; and it is anticipated that this establishment will be frequented by the resident visitors, in contradistinction to those who simply pass down on their way to the Continent, to whom the Lord Warden Hotel would give accommodation.

The new station of the London, Chatham, and Dover Railway, in close proximity to the hotel, renders its position still more eligible than it would formerly have been.

The property purchased exceeds one acre in extent, and the grounds have the advantage of possessing well-grown trees, which will be carefully preserved; and it is considered that the association of trees and ornamental grounds with a marine hotel will be an attractive feature in the scheme.

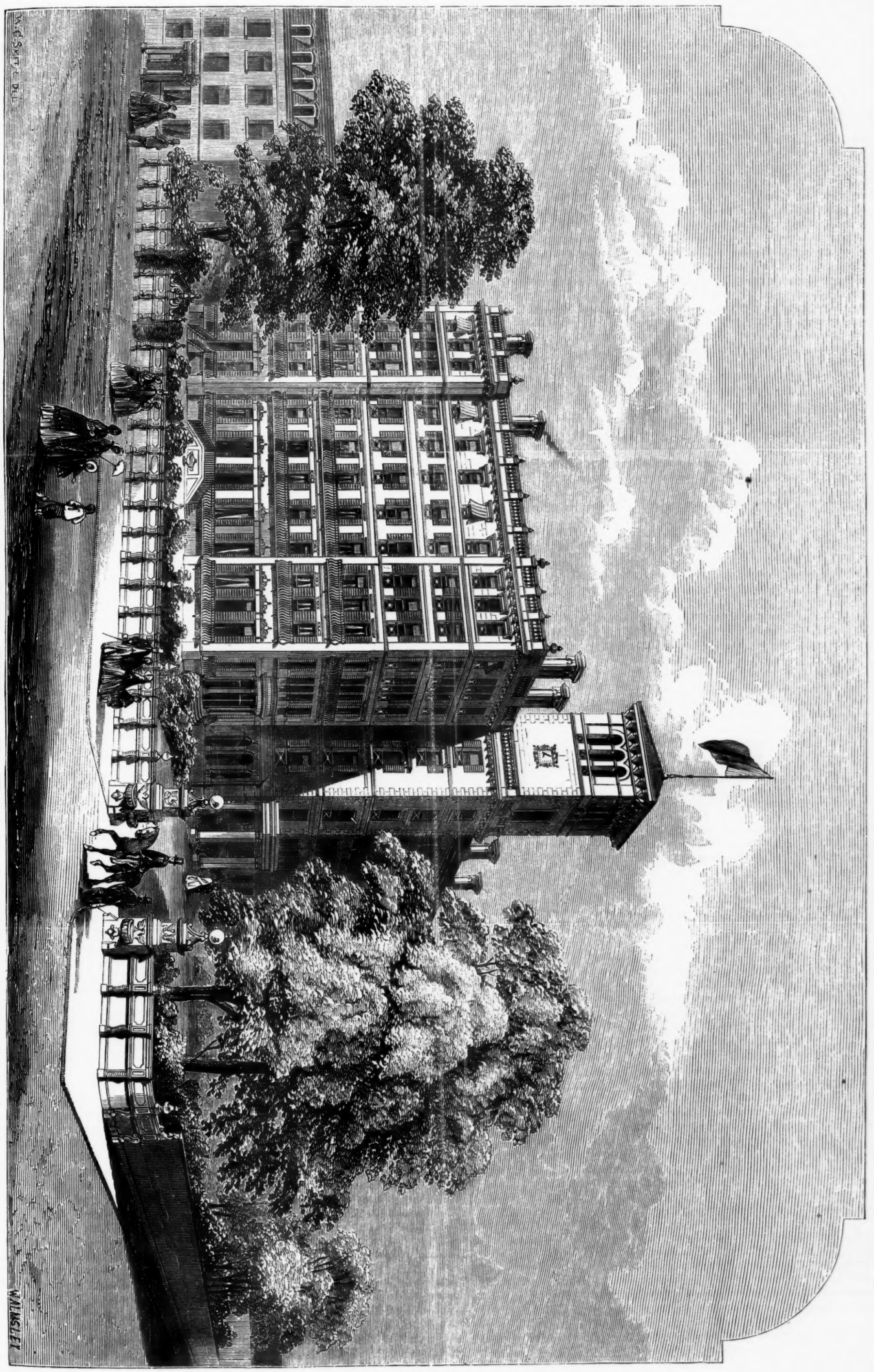
The hotel itself is a fair example of the large structures having similar objects which are now rising up on all hands, and which appear to have taken a firm hold of the sympathies of the investing public in this country, and promise to afford ere long the same comfort in travelling which heretofore has only been found on the Continent and in America.

The Clarence Hotel has been designed with a view to comfort and convenience rather than to grandeur or show. The structure is to be thoroughly substantial, and so arranged that suites of rooms can be converted at pleasure into a private house, and, when not so required, available in the ordinary way as distinct rooms. All the modern necessities of joint-stock hotels are provided in the shape of hydraulic lifts for food, luggage, and passengers, the newest appliances of bells, speaking-tubes, and apparatus for cooking, heating, washing, &c. The corridors and staircases are built of incombustible material. The building will contain about 160 rooms in all, including a coffee-room, 55 feet by 30 feet; a ladies' coffee-room, 45 feet by 22 feet, with a conservatory for it leading to the garden; billiard-room; fourteen private saloons or dining-rooms, and ample domestic offices.

The hydraulic machinery will be worked without cost by an ingenious arrangement in using the head of water supplying the various cisterns from the great tower in which the main cistern is placed.

The corridors and apartments will be warmed by circulating hot-water pipes; and the ventilation of each room is provided for and finally disposed of by means of distinct flues, which are excited by contiguity with the hot flues from the stokery, kitchen apparatus, laundry, &c., so that an effective and constant supply of pure air is always in motion.

The cost of the building, including the cooking and warming apparatus, will be about 50,000*l*. The design is by Mr. Whichcord, architect, under whose supervision it is to be carried out. The first stone is to be laid on the 29th instant.



THE CLARENCE HOTEL, DOVER.—MR. WHICHCORD, ARCHITECT.

WATER FOR LONDON.

FINDING the question of the water-supply to the Metropolis again occupying attention, I hand you some details that may interest your readers.

Although the supply was calculated at 10,140,500 cubic feet per day, or at the rate of 30 gallons per head per day of the population, yet it was notorious that there were in London 70,000 houses, occupied by more than half a million persons, that had no supply whatever.

The 30 gallons per day to each individual were thus shown to be practically a fallacy. Yet, were it true, certain essentials would still be lacking.

The metropolis wants water, but good water, sweet and wholesome, not diluted mud and sewer refuse; as it is notorious that on all the tributaries of the Thames the cottage privies stand over the streams; the hog-styes and dunghills drain into them; the Thames itself, in its course of 160 miles, receives the refuse outpourings of 223 cities, towns, and villages; to say nothing of the various paper-mills, iron-works, gas-works, and other objectionable places that discharge their refuse into the Thames and its tributaries. I also consider the manner of distributing the water-supply of London objectionable. I believe the water companies insist upon *leaden* pipes being used, which must seriously contaminate the water in passing through them; indeed, in the system of an intermittent supply, in some cases the water must stand for days in the leaden pipes.

Then there are the cisterns, an indispensable arrangement to an intermittent supply. Any sort are highly objectionable, as their situation prevents their being frequently examined or cleaned, and they are generally receptacles for rubbish and filth; and if out of doors, in summer time, you have your water lukewarm out of them, and sometimes a rapid aquatic vegetation occurs.

Analyses of water engaged the attention of the great chemist, Berzelius, during some of the latter years of his life. He found it impossible to divest water, once contaminated by human excreta, of its noxious principles.

The mischief of all impure water is what is in solution: the impurities in suspension can be mechanically arrested, and that is all the filtering-beds of the water companies can effect; but they do not do all that can be done by them even in that matter.

The inhabitants of London require a soft, as well as a pure water; for it was calculated twelve years ago that 12,000 tons of soap per year were used, which, at 50*l.* per ton, amounted to 600,000*l.*; whereas, had the water been soft, 3,800 tons would have sufficed, which, at the rate of 50*l.* per ton, would have only amounted to 190,000*l.*; or, in other words, 100 gallons of London water required 30 lb. of soap, to make a sufficient lather, and the same result was obtained with 100 gallons of softer water with 9½ lb., which is about 200 per cent. in excess.

Since the reports of the Health of Towns Commissions a few years back, many schemes have been put forward with a view to a pure and efficient water-supply to the metropolis. Artesian wells, distant lakes, and streams were spoken of as available sources; but of course the water companies' influence raised objections against every plan as unfeasable.

Forcible objections must be urged against increasing the already too numerous associations of irresponsible companies. One great controlling administrative authority appears to be the essential principle of true sanitary reform.

In some towns, where the waterworks belong to the Local Board of Health, they wash down the footways, streets, courts, alleys, and even the fronts of the houses where requested to do so. What a boon such an arrangement would be to the narrow alleys and close courts of the metropolis. I find it is calculated to require one gallon of water to wash one superficial yard of a paved court, alley, footway, or street.

In dry hot weather, it is the practice of some local boards of health to flush their street-gullies and sewers, which is a very excellent plan; but it is almost out of the question in the metropolitan district, although very necessary, as a district surveyor informs me 10s. per hour is the price charged by the water companies for drawing a fire-plug to let the water run for that purpose.

I am of opinion that the present water-supply of the metropolis is as deficient in quantity (to the sanitary requirements) as in quality. And, with all our advances in engineering and sanitary science, it must be admitted that the water-supply to the metropolis is miserably deficient: in fact, it is a disgrace not only to London, but to England. Why not, by some means, raise the two millions and a half of capital that the eight companies are supposed to represent, and take the monopoly out of their hands.

I consider most of the cities in England, many in Europe and North America, far better supplied than London is with water; and the water companies being irresponsible, their servants consider they have a right to act as they think fit: they tear up roads and footways at most inconvenient times and positions, and they lay in their water-pipes so shallow that a sharp frost stops the supply even in the main pipes, which is a serious oversight, and plainly shows they do not pay sufficient attention to the practical part of their business. I will not assume them to be so penurious as to assert that it is done to save expense to the company, to the serious inconvenience of the consumers at such times, as many can recollect that during the last severe frost no water ran through the pipes for several weeks.

I hand you a few memoranda of the different water-supplies in England, Europe, and North America.

London Water Companies in 1850.

	Supplied in million galls. per year.	Galls. per house pr. day	At a cost t company per million galls.	Degree of impurities per gall. in 1863.
			£ s. d.	
New River	5,278	174	9 17 4	17·76
East London	2,956	143	6 7 7½	21·08
Southwark*	1,820	143	5 9 4	18·89
West Middlesex *	1,109	124	16 9 7	14·24
Lambeth*	913	107	15 0 6½	18·36
Chelsea *.....	1,304	170	19 10 4½	16·44
Grand Junction *	1,127	220	9 14 6½	17·48
Kent.....	323	98	17 2 10½	25·88
Hampstead.....	145	89	22 5 7½	

The total supply by all the nine companies for street watering, flushing sewers, and fires, was estimated at 16,748 millions of gallons per year at this date, 1850.

There are many other cities and towns in England that are well supplied with water, of which I have no memoranda; but I am convinced that London is very far behind them in the water-supply.

The Roman water-works were splendid, and ought to shame modern Europe:—

Aqueducts.	Length.	Galls. in 24 hours.
Appian, 312 B.C.....	10 miles	27,724,181
Old Anio, 273 B.C. ..	36½ „	66,813,887
Maician, 146 B.C. ..	57 „	74,249,917
Fepulan, 127 B.C. .. }	14½ „	6,760,386
Julian, 35 B.C. .... }		18,321,407
Virgin, 22 B.C.	14 „	38,040,467
Alsietina, 14 A.D. ..	20 „	5,625,016
Claudia, 49 A.D.....	42 „	96,988,991
New Anio, 90 A.D..	54 „	71,979,127
Total		376,834,379

Some auxiliary feeders made the total length of aqueduct at the period to exceed 255 miles in length. The Pont du Gard aqueduct, 30 miles in length, was in use four centuries; and, after the lapse of fourteen centuries, so excellent was the construction that it could be restored without considerable outlay.

The Versailles aqueduct is 98 miles, and out of it there are 13 miles of tunnel; the Versailles and Marli aqueduct, is 4,400 feet long and 200 feet high.

Iron pipes are much inferior to masonry for the conveyance of large quantities of water, to say nothing of the danger and inconvenience in case of bursting.

The Croton aqueduct and water supply to New York are a grand piece of engineering, 40¼ miles in length; the cross section, 53.34 feet in area, capable of conveying thirty million gallons per day. There are also above 180 miles of pipes, varying from 36 inches to 4 inches in diameter, laid through the city, to distribute the water supply: the receiving reservoir is about 35 acres, and usually holds about 150 million gallons. The distributing reservoir is about 4 acres, and holds about twenty million gallons. Cost of the water-works, 8,575 thousand dollars; cost of the distributing pipes, 1,800 thousand dollars.

The Fairmount waterworks supply the city of Philadelphia through 97 miles of iron pipes. The daily consumption, in 1848, was 4,275,352 gallons: 2,418,016 gallons was the supply to London (see table). Boston has also an aqueduct supply, but of those works I have no information, although my relatives resided there for many years.

There is plenty of water which could be stored to supply London by gravitation. I am decidedly opposed to pumping by steam-power. The ancients supplied Rome by gravitation, and that is the proper way to supply London. Any of your readers that may be interested in this matter will find some valuable information in several Government blue books. ANTI-MONOPOLY.

* River Thames companies.

SANITARY STATE OF ST. GILES'S.

THE annual report for 1862, on the "Sanitary Statistics in St. Giles's District," by Dr. George Buchanan, medical officer of health for the district, has been printed. It states that the mortality of London and of the central districts being high during the year, the death rate of St. Giles's was of course also in excess. In 1862, the large number of 1,563 deaths occurred amongst residents in St. Giles's district. This number represents a rate of 28 9 per 1,000 inhabitants, being a considerable increase above the death rate of any recent year. There was, as usual, a large excess of deaths among males, 814 of them having died to 749 of the other sex. Fifty-four of 80 hospital deaths were among males. The average age at death was 27 years and 10 months. Four hundred and seventy-six infants died before they were two years old, and 191 others between the age of two and five. Forty-three out of every hundred deaths, therefore, were those of children under five years old. The high mortality of St. Giles's in 1862, resulted firstly, from a small excess (5·5 per cent., and less than the average excess of former years) in the class of miasmatic or contagious disease, of which typhus fever was the only member contributing an exceptional mortality above other districts. Secondly, from a large excess (47 8 per cent.) in the important class of consumptive disorders. Thirdly, from a great excess (54·3 per cent.) in the equally important group of lung diseases, acute and chronic; and, fourthly, from a great excess (65·8 per cent.) in such children's diseases as are not comprised in the foregoing classes. The causes of the diseases thus in excess are to some extent such as public sanitary measures can deal with, but are to a greater degree dependent on conditions of exposure, destitution, and ignorance, that cannot be dealt with directly by the officer of health. The continually deteriorating state of the courts about Little Coram-street is believed to have had the main share in the increase of mortality, and it is to be feared that this increase will continue until some thorough sanitary improvements are here made. The Coram-street neighbourhood has already attained the evil distinction of being bracketed with Southern Drury-lane in its mortality.

THE ARCHITECTURAL ASSOCIATION.

THE ordinary meeting of members was held on Friday, the 27th ult., at the House in Conduit-street. The chair was occupied by the president, Mr. T. Roger Smith.

The following gentlemen were, on ballot, elected members of the Association: — Mr. R. Almond, 11, Kingston Russell-place, Oakley-square; Mr. William Duke, ditto; Mr. James Hunt, Kentish-town; Mr. Frederick Morley, 33, Asker-street, Brompton; Mr. H. T. Keates, 20, Acton-street, Gray's-inn-road; Mr. John Henry Ion, 4, Albion-street, Hyde Park; Mr. John Codd, 105, East-street, Manchester-square; Mr. Edwin Penn, 14, Wilmot-street, Camden-town; Mr. Henry Blackwell, 35, Argyll-street, Argyll-square; Mr. Henry Barr, 126, Marylebone-road; Mr. A. G. Thompson, 4, Upper Gower-street; Mr. C. R. Hancock, 2, Dorchester-place, Blandford-square; Mr. A. C. Cuming, 10, Albert-street, Camden-town; Mr. Henry Burt Russell, 8, Adelphi-street, Strand; Mr. Thomas Dickson, 3, Paynter-street, Poplar; Mr. H. Kreisq, 7, Stratford-place, South Pimlico; Mr. John McLeod, 1, Featherston-buildings, Holborn; Mr. Thomas Farrer, 25, Hamilton-street, Camden-town; Mr. J. H. Leonard, Torrington-square; Mr. G. Buxton, 4, Warwick-court, Holborn; Mr. Charles Brooks, 8, Parliament-street; and Mr. T. E. Munday, 40, Ellington-street.

Letters of resignation were read from Mr. Walter Paris and Mr. Molecey, members of the committee, on the ground that they had accepted appointments abroad. Mr. Florence and Mr. Arthur Smith were recommended as their successors on the committee, subject to election at the next meeting.

Mr. Florence and Mr. J. Johnson were also nominated to be secretaries to the class of design.

Mr. C. J. Adams, hon. sec., read a report of the operations of the Association for the year 1862-3, and also the cash account.

After some discussion in reference to the latter,

in which Mr. Paraire, Mr. Rickman, Mr. Ridge, and other gentlemen took part, the report and abstract of receipts and expenditure were received and adopted.

Mr. J. Tarver brought up the report on the class of design, which stated that 167 drawings had been contributed by twenty-nine members and that the average attendance of students each evening was fourteen.

Mr. Lewes read the report of the Library Committee, and Mr. J. Johnson brought up that on the modelling class. The latter contained an expression of regret that so limited a number of members had availed themselves of its advantages. It also stated that, as a consequence, the class had been closed.

The Chairman observed that the class of design and the voluntary architectural examination class had, no doubt, absorbed a good deal of time and attention, but that he hoped the modelling class would be revived at a more opportune moment.

The report on the voluntary examination class was brought up by Mr. Ridge.

Mr. Rickman read the report of the delegates appointed to attend the annual meeting of the Architectural Alliance, held in London on the 1st of July last.

The report was ordered to be referred to the committee.

After some other routine business,

The Chairman announced that the next subject for the class of design would be an open timber roof; and that on the 11th instant the prize essay on vaulting and groining would be read. If time permitted, the meeting would then resume the adjourned discussion on Mr. Darbishire's paper on the construction of workmen's houses.

CHURCH-BUILDING NEWS.

Notting-hill.—On Friday in last week, the Bishop of London consecrated another of several new churches which have been erected within the last few years in the daily-extending parish of Notting-hill, and which, we understand, is but the forerunner of two or three others to be built in the new districts assigned for them, within a short period. The edifice is situate in the new district called St. John's, within a short distance of the Metropolitan Rifle Ranges, Wormwood Scrubbs. It is dedicated to St. Mark. Mr. E. Bassett Keeling is the architect.

Islington.—On the 25th ult., the foundation-stone of St. Michael's, Islington, was laid by the widow of the late Mr. John Randell, who had left a piece of ground, 160 feet long by about 90 feet in width, for its site, near the Great Northern Railway, and had endowed it with an income of 200*l.* per annum, arising out of the freehold ground-rents of thirty houses in that neighbourhood. A large portion of the funds for the building have been collected by subscription, to which the Randell family have very largely contributed. The church is designed by Mr. R. L. Roumieu, architect; and the builders are Messrs. Dove, Brothers. The church will contain 750 sittings, with capabilities for future enlargement.

Lee (*Kent*).—The new church of Holy Trinity, erected at Lee by Mr. Lewis Glenton, of Blackheath, at a cost of 10,000*l.*, has been consecrated by the Bishop of London. The church is built of Kentish rag stone, in the Gothic style, from a design by Mr. S. Barber, of London. It contains a stone pulpit, coloured glass windows emblematical of the most marked events in the life of our Saviour, and is internally decorated.

East Lavant (*Sussex*).—The church of the village of Lavant has been restored, added to, and improved, under the directions of Mr. G. M. Hills, of London, architect. The building was very incommodious and in a very dilapidated state. The works have been executed by Mr. Blaker, builder, Littlehampton. The west door is preserved in the restoration. To the arcade on the north side of the nave has been added another arch at the west end, thereby opening up to the church a part of the aisle previously shut off by a dead wall. An entire new chancel arch has been made in the original east wall of the early church. The arch opening into the tower on the south of the nave has also been reconstructed in stone, instead of the rude brickwork which was found there. The flat ceiling of the nave has been taken out, and a ceiling of the waggon-head form introduced; and, instead of the dormer windows which existed in the roof, stone windows have been inserted on both sides of the church. The only ancient window of the nave that appeared until the plaster was removed from the walls is still preserved above the west door, being an insertion of the fifteenth century. On the removal of the plaster a little window was discovered on the south side of the nave. The new aisle windows were designed after a small one which was found there: they are of the lancet period. In the chancel the old roof, with its flat ceiling, has been removed, and a roof, with arched timber braces and open timber work, constructed. A wooden window at the east end has been replaced by one of stone—a traceried window of three lights. In refitting the chancel six ancient oak stalls have been preserved, and are placed against the north wall, with their tabernacle work of oak above them. The new seating generally is executed in deal stained and varnished, all being low open seats.

Priors Marston (*Warwickshire*).—Priors Marston church has been reopened. The restoration has comprised an almost entire rebuilding of the nave and aisle with new roof, stone pulpit, and stalling throughout. A memorial font has also been presented, consisting of Bath stone, surrounded by alabaster columns, and having an incised inscription round the edge. The whole work has been completed by voluntary subscription and the sale of old materials, its cost falling little short of 1,000*l.* The architect was Mr. Joyce, of Stafford; builders, Messrs. Lilley & Elliott.

Pershore (*Worcestershire*).—The restoration of Pershore Abbey Church is going on, and the church is now being reseated. The pinnacles have been completed. They counteract the lateral thrust of the vaulting of the choir. The exterior of the choir, side aisles, N.E. and S.E. transepts and chapels, have been repointed, and the defective mouldings and ashlar restored. A damp-proof course of concrete has been placed round the building, with a Forest of Dean kerb, to take the surface-water into drains (constructed of glazed stoneware pipes). Gas-pipes have also been laid down. The vestry is to be formed by a screen towards the south end of the south transept. The font will be placed under the first bay in the south transept. The old organ is to be reconstructed and adapted for its new site, in the N.E. chapel. The amount of liabilities to the present time, to be provided for by the committee, is 5,051*l.* 16s 6d. This includes Messrs. Collins & Co.'s contract, 3,630*l.*; architect and clerk of the works' charge, 410*l.*; Messrs. Haden & Co.'s tender for warming, 160*l.*; removing and refixing organ, 50*l.*; besides new seatings, stalls, gas-pipes, encaustic tiles, iron palisading, and many other incidentals. To meet the total present liabilities, the sum of 4,714*l.* 1s. 5d. has been raised, and the interest of money deposited at the bank has accumulated to nearly 100*l.*, leaving a deficiency of but 343*l.* 15s. 1d. A few items remain to be provided for which had not been taken into the account, such as pointing the south transept, providing moveable seats for the middle aisle, pulpit, gas-standards, and re-opening the lantern-tower. No estimate of the cost of this item has yet been handed in by Mr. Scott; but it is probable that, including the deficiency above named, a total amount of some 800*l.* or 900*l.* will have to be raised beyond the present amount of subscriptions. The former curates of the Rev. Dr. Williamson have consulted Mr. Scott, the architect, as to a testimonial of their respect for the Rev. Dr.; and he suggests that they should provide a fresco, to fill the blank bay above the chancel arch, and which was evidently so occupied in former times. They have made preliminary inquiries of Messrs. Clayton & Bell, whose reply being satisfactory, Dr. Williamson has been informed of the intention, and has approved of the design.

Charlton Horethorne (*Somerset*).—St. Peter's Church has been re-opened after restoration and repair. The church consists in plan of a nave with north and south aisles, south porch, chancel, and western tower. The restorations were begun by placing a new roof on the chancel, re-seating the entire area of the church. The roof is constructed in the same manner as the nave, *i.e.*, boarded to a circle, and divided into panels by ribs with carved bosses. The seats are all open, and are of oak, the panels of bench ends being of pitch pine. A new reredos, of Bath stone, has been placed in the chancel. In the course of the restoration it was found necessary to entirely rebuild the whole of the south arcade, south aisle, and porch. The type of the north arcade was followed, but the details varied. The carved heads under the corbels represent the Prince and Princess of Wales. The old door and windows were reinserted; and the old roof, together with those of the north aisle and nave, repaired. The earth which had accumulated against the walls is removed, and a drain formed round the church. One of the windows in the chancel has been filled with stained glass, the gift of the vicar, the Rev. J. F. S. Phabayne; and the east window of the north aisle has been also filled with stained glass, by the Rev. W. M. Church, and represents the heraldic bearings of the Hussey family. Both these windows are by Messrs. Clayton & Bell. The contract for the whole of the works was taken by Mr. Clarke, of Bruton. The carving of the reredos, pulpit, and seats was executed by Mr. Forsyth. Mr. William Slater was the contractor.

Doncaster.—It has always been said, remarks the local *Gazette*, that a mistake occurred in the building of the bell-turret and spire of St. James's Church, and that it was not done according to the intention of Mr. E. B. Denison, who gave the general design. However that may be, the former spire was a decided failure, both in shape and proportion, and had a mean appearance, quite at variance with the general character and size of the building. At last Mr. Denison determined to pull it down and build a larger one at his own expense, and from his own design. The walls below fortunately afforded a proper basis for it. The new spire being 13 feet wide instead of 10 feet, and 120 feet high instead of 95 feet, is of more than double the bulk of the old one. It is also of more decorated construction, having eight deeply recessed belfry windows, with numerous shafts and carved capitals, and the ball-flower ornament round the cornice, and eight gargoyles at the rise of the spire from the octagon, which is ornamented with diaper bands like that of Salisbury. Mr. Denison has also thrown an arch, 32 feet high, over the vestry at the west end of the church, and thereby got rid of the long straight edge of the tower which ran from the floor to the roof. The work is now completed. The cost is about 860*l.* altogether. Mr. Teale, of Doncaster, has been the architect; and Mr. Athron, the contractor. The stone is from Ancaster, the same as the church is built of.

Aberdeen.—St. Mary's Church, Carden-place, is now approaching completion. It is built principally in the Middle Pointed style of Gothic architecture, with some of the details partaking of Italian and Scottish character. The building consists of nave, quasi-transepts, and chancel, the latter being flanked on the north and south sides by small circular-sided buildings projecting therefrom, the one on the north side forming a vestry, and that on the south side to contain the organ. Underneath the chancel is a crypt, the ceiling of which is supported on pillars, and groined, on which again is formed the floor of the chancel. The nave is divided into five bays by the clerestory windows, which are alternately circular and coupled lancets—three circular and two pairs of lancets on each side. All the windows in the church are in the clerestory of the side walls, and the circular windows in gables considerably higher up; the light entering the church being kept as high up as possible. The circle being the predominant figure throughout, the circular windows are filled in with plate tracery, each window having a large circular opening in the centre, and seven smaller ones round the large circle, and small apertures of circles or trefoils on the outer circumference give variety. The west gable is stepped to the line of the roof, and shows the largest circular window, 14 feet in diameter: on either side of this is a small circular window below, in line with clerestory windows. This gable is divided into three divisions, by flat piers running high up into the gable, the centre division containing the large west window, and the principal doorway underneath. The transepts externally present each a large circular window, 12 feet in diameter, with four lancets underneath. The chancel has four lancets on each side of clerestory, and in each of the three faces of the hexagonal apse at the east end is a circular window, surmounted by a small stepped gablet, carrying crosses. At the junction of the ridges of the roof over the centre of the transept, a large ornamental spirelet is formed, octagonal in plan, the lower part of varnished wainscot. The chief features of the outside are brought out by the use of different coloured materials, the architecture being kept up in general of a more than usually severe character. In the masonry, which is rubble-granite, the parts are marked by the use of bands of red and white freestone and black granite. These stones are also alternated in the formation of the circular and other windows and principal details throughout. The whole length of the church inside is 123 feet. The nave, including transept, is 90 feet long, 36 feet 4 inches wide; 30 feet high from floor to top of side walls, and 60 feet high from floor to apex of roof. The chancel is 22 feet wide, and 33 feet 6 inches long; side walls, same height as

nave, and from floor to apex of roof, 53 feet. The point of the cross on the spirelet stands 112 feet above the ground. The glazing in the nave and transepts is of tinted glass, in geometrical patterns; that in the chancel of geometrical designs in painted glass, and the east window of figure subjects. The church will accommodate between 700 and 800 persons. A painting of the crucifixion will be placed above the altar; and there is a great amount of incised work, encaustic tiling, and inlaid work, &c., to be yet finished. The architect is Mr. Alexander Ellis, of Aberdeen.

Piltown (*Waterford*).—The new church at Bessborough Park, Piltown, which has been some time in course of construction, according to the plans of Mr. G. W. Street, late of London, under the contract of Mr. J. Fitzpatrick, of Waterford, in Ireland, is now completed. The nave is 62 feet long by 33 feet wide, and is seated to accommodate about 298. The seats are low, open, and made of Memel wood, stained, the ceiling being also open work of the same material. The height of the church is about 42 feet, and the chancel measures 23 feet long by 17 feet wide. The walls are bare, but pointed, the stones for which, viz., granite limestone and grey marble—were all furnished from the estates of the Earl of Bessborough, who gave the site. There is a circular tracery window over the main entrance, which, with six small ones immediately below, and three windows each side of the nave, provide light for this portion of the building, the chancel being furnished with one main and two side lights brought from the old Fidown church. The cost of contract and architect's fees amounted to about 2,400*l.*,—800*l.* of which are forthcoming by the Ecclesiastical Commissioners. The earl's under agent, Mr. Richardson, superintended the erection as overseer of work.

THE FALL OF HOUSE IN ISLINGTON.

ON Monday last Dr. Lankester, the coroner for Central Middlesex, opened an inquiry at the Lansdowne Arms, Islington-green, into the circumstances attending the deaths of John Peake, carpenter, and Joseph Pearce, carpenter, who lost their lives consequent on the falling down of the premises in Upper-street, Islington, in which they were at work, known as the Wheatsheaf public-house, in course of rebuilding.

Mr. Layton, vestry clerk of Islington, attended on behalf of the parochial authorities; Mr. Tindal Atkinson, barrister, on behalf of Mr. Chapman, the builder; and Mr. Bradlaugh, solicitor, on behalf of Mr. Williams, the architect.

The room, though large, became so crowded that the coroner suggested an adjournment to the music-hall of the establishment, which was at once placed at the disposal of the coroner by the proprietor.

Evidence was then taken. In the course of it, Mr. John Baker, Hatton-garden, a retired builder, deposed that he was passing in front of the premises on Thursday morning last. While doing so he was alarmed by a sudden fall of bricks from the corner of the building, which knocked down a child belonging to one of his friends. He at the same time heard a tremendous crash, and ran up the archway of the Hall. He then found it was the front of the Wheatsheaf that had fallen in. There appeared to be great confusion amongst the workmen, and some were busy in endeavouring to extricate those who were buried in the front of the building. Saw three men picked out of the rubbish and taken away in a cab to the hospital. He then went up the archway of the Hall to the back of the building, and saw another man taken out of the ruins and sent away in a cab. This was an hour after the accident had occurred. He then saw a Mr. Cufflin with some workmen in the act of throwing a rope near a stack of chimneys to pull it down. Called out to them not to do so, as the falling bricks would injure the men already lying in the ruins, also the men who were trying to release them. When the last man had been got out alive, he saw the legs of a man protruding from the rubbish in the basement of the house. All this time the chimneys he had spoken of were thrown down, and some of the bricks fell on the spot where the man was lying. A gentleman who was present, and himself, then gave some workmen money to shore up the cross partition-wall, which he thought was in a very dangerous state. The whole front of the house appeared to fall bodily at once. Saw no iron bond or plate amongst the rubbish that before it fell had formed the front of the house.

Mr. Hollinshead, author, said he was at the scene of the accident a few minutes after it had taken place. He saw about a dozen men digging in the rubbish at the left-hand corner of the ruins. Those men, after a few minutes, were called away by some person to assist in pulling down the chimney walls, the bricks from which fell into the basement immediately over the spot where the bodies of the deceased men were found. He then went round to the back of the premises, but finding no person there in authority, asked the workmen if any of their number were missing. He was told "Two." He then urged the men to search for their missing comrades, and at this time he heard another portion of the chimney fall or thrown down. Was not prepared to say that the falling or throwing down of this chimney wall had anything to do with the deaths of the deceased men; but thought the wall ought to have been thrown down in another direction than immediately over the place where the men were then lying.

Mr. Timewell, juryman and builder, asked if the gentlemen representing the builder and architect were prepared to submit the original plans and specifications to the jury. They might materially affect the inquiry.

Mr. Bradlaugh said he would have the specifications printed, and supply each of the jury with a copy. It was ultimately decided that the original plans should be at once placed in the hands of Mr. Dennis, the foreman, for the use of the jury, Mr. Bradlaugh undertaking to supply a copy of the specifications.

The inquiry was adjourned till Monday next.

The following is part only of a communication on the subject:—

Sir,—Inasmuch as I have never been within the building, I court the charge of presumption, when I volunteer to tell you the primary cause of the accident above mentioned. It is this,—

Brickwork made defective and every way unsound, *by insufficient* and in *principle wrongly-constructed scaffolding*, a matter over which the district surveyor has not the shadow of a right of supervision or control of any kind.

In the case under consideration the scaffold was of the ordinary kind. This was an error on the part of some one; for in all cases where work is carried on rapidly, day and night, without cessation, the scaffold should be "*an independent one.*" The true principles of scaffolding, and their modifications and adaptations, are so simple, as to make them thought unworthy of the consideration of contractors and their foremen.

I will now proceed to show how the ordinary scaffold acts as a destructive agent upon bricklayers' work, when carried up, and followed by the other trades with undue rapidity. The swag of the ladder with the men passing up and down; the action of the wind upon standards, ledgers, and boards; the effect of changes of the atmosphere upon scaffold-cords and wedges; the sway given in all directions to the scaffold by men working thereon; the using of standards and ledgers for the hoisting of materials; the fastening points for derrick guys, &c.,—these various forces act upon the putlogs. Every *weighted putlog* (and there will be some dozens of them inserted in the walls) becomes a lever, acting perpendicularly, sometimes horizontally, and, still worse, acting at times as a combination of the lever and the wedge—not only as the simple wedge, but as the folding and semi-reversed, or lifting wedge,—I say, these forces acting upon the putlogs are so many destructive agents to sound work, be it done ever so well, by keeping the work night and day in a sort of spasmodic or irregular tremour or vibration, the irregular tremour effectually destroying the adhesive properties of the mortar, and, of course, preventing its setting. Many years since I made a calculation, and I have since verified it, with a distinguished officer of the Engineers, when engaged upon similar works, by comparison of notes and observations. It is this: a plasterer running a mould, a man lifting, a carpenter "pinching along" a principal, or a labourer pulling a rafter over a ledger, becomes a destructive agent (+ his own weight) of upon the average 50 lb. + the swag of ledgers and standards, and + the leverage of putlogs.

Now, sir, suppose we have but twenty-five men thus engaged, thereby we have a destructive agent created and in constant action (as in the present case), equivalent to a force of 1,250 lb. + leverage, &c., distributed throughout the brickwork, and this force is acting *irregularly* at *regular* distances of twenty-four courses of brickwork in height, and 6 feet laterally; in fact, throughout the scaffold upon every weighted putlog, now lifting, now acting laterally, and always in the same straight lines of bond.

In conclusion, I repeat that the primary cause of the accident which forms the subject of this hurried letter was, in my opinion, defective brickwork, caused by imperfect and wrongly constructed scaffolding. The remedy in other cases is simple, viz., in all cases where the work is carried on night and day, without a chance of resting time for settling, use an *independent scaffold.*

One further suggestion. English bond is undoubtedly the best for all works, but in works carried up rapidly, it appears to me to be really essential. P. N. W.

ARCHITECTURAL LIBRARY, SOUTH KENSINGTON MUSEUM.

YOUR late notices of new foreign architectural books I think will be of great use, and I hope they will be continued. The list might be much enlarged. Architects are not half alive to the importance of making themselves acquainted with books. When established in practice, they are in general content to rub along in a jog-trot way, relying on old studies and early impressions; whereas, to keep the mind fruitful, a man requires to use constantly his sketch-book and study new works. Reynolds's advice to artists generally is especially applicable to architects:—

"It is indisputably evident that a great part of every man's life must be employed in collecting materials for the exercise of genius. Invention, strictly speaking, is little more than a new combination of those images which have been previously gathered and deposited in the memory. Nothing can come of nothing. He who has laid up no materials can produce no combinations. The more extensive, therefore, your acquaintance is with the works of those who have excelled, the more extensive will be your powers of invention, and, what may appear still more like a paradox, the more original will be your conceptions."

Those who wish to see the books you have described, will find them at the South Kensington Museum Library. It has been much the fashion to abuse this institution; but I feel quite sure, if Englishmen found such a one in Paris, words would not be able to express their great admiration. The Art Library of about 9,000 volumes is especially valuable to architectural students, it being the only one we have which is generally available. The British Museum Library is virtually closed, except to those who have little to do, from the difficulty and loss of time in getting books.

The advantages of the Kensington Museum Library are, that it consists of all the principal old works on architecture and cognate subjects, and *the latest.* The books can be taken from the shelves by the student, if he likes: at all events, there is no delay in getting what he requires. The library is open daily, and on Mondays, Tuesdays, and Saturdays, *in the evening,* till ten o'clock. Tracing is permitted, and the charge is very trifling,—6d. per week, 1s. 6d. per month, or 10s. per annum.

ARCHITECTUS.

GAS REFORM NEEDED.

LONDON *v.* EDINBURGH.

SOME fifteen years ago the citizens of London were in a state of civil commotion about the price and quality of gas: a new company was formed, its object being the supply of a cheaper and superior article; and having succeeded in establishing themselves, the public would naturally expect that all the modern improvements in the manufacture and materials used in producing gaslight would be resorted to by this reforming gas company; that the citizens of London would, under their wing, be supplied with the best article at the lowest price; in short, that London would take the lead in the quality of its gas, as it does in its porter; instead of which, it appears by the reports in the columns of your contemporary, the *Journal of Gas Lighting,* that we are 150 per cent. worse lighted than the inhabitants of Edinburgh. I want to know why is this? Has the new company amalgamated with the old ones, or is the Edinburgh company content with less profits? I observe also that at the general meetings of our London companies, the directors take great credit to themselves for the present prosperity of their undertakings. One chairman, evidently in blissful ignorance of the reports I refer to, tells the shareholders "*that as far as the illuminating power is concerned, nothing better could be desired than the article they supply;*" it being equal, according to his statement, to 13½ candles; while at Edinburgh it ranges from 30 to 34 candles. Another chairman of another cheap and good gas reforming company, while addressing his proprietors, informs them, "*that their business has so much increased, as to necessitate an outlay of* 24,000*l.*

on a gas-holder that will be the finest and largest in the world," and chuckles over the proud position they will then occupy; apparently oblivious to the fact that by doubling the illuminating power of his gas, this monster gas store would not be required at all, and his gas would even then be 30 per cent. inferior to that in Edinburgh. It forcibly occurs to me that those men are in ignorance of the properties of good gas: they are not generally chosen because of their scientific attainments; but it certainly forms a part of the duty of their engineer to inform them, previously to their coming before the public, of what is really *good gas*. We would then be spared the silly meaningless episodes about the superiority of London gas, and of theirs in particular; and, although it may occasion a disappointment to the prospective vanity of the chairman last referred to, I would advise him to save the shareholders the 24,000*l*. Let him and his talented engineer run down to Edinburgh and pick up a wrinkle from the gasmakers there; ascertain how to store a quart of London brandy in a Scotch pint-pot: they will be wiser men at the next meeting of their shareholders.

The object of this letter is to direct the attention of London gas companies to the reproachful comparison of the illuminating power of the gas supplied by them, with that provided by our neighbours in Edinburgh; and, without any threat, I would suggest the propriety of a speedy improvement on their part, else they may depend on it the shopkeepers of the British metropolis will not long willingly consent to breathe a superheated, deleterious atmosphere, when, by using gas similar to that supplied to the northern capital, little more than one-third of the present combustion would afford them the same amount of light.

SHADE OF CHARLES PEARSON.

ARTISTIC NATURAL THEOLOGY.

SIR,—Permit me, through the medium of your journal, to call attention to this interesting though neglected subject. Art-writers have, indeed, for many years past, been in the habit of alluding to the æsthetic laws of Nature; but, so far as I am aware, no one has systematically investigated them, or attempted to deduce from them conclusions relative to the being and attributes of God. Dr. Paley (Griffin's edition) devotes only seven pages to the consideration of beauty in Nature, and seems all along to have lost sight of the fact that artistic is as truly a science as ordinary natural theology, and that the very instances which he adduces of utilitarian, are intimately associated with artistic, contrivance.

It will hardly be disputed that a correct, or even partial, knowledge of the artistic branch of the subject may be of great advantage to the professional architect. If he would see the principles of his art rigidly and consistently carried out, let him go to Nature. It, and it alone, is marked by an *entire* absence of sham and pretence of meretricious or defective taste. The works of God are, like Himself, infinitely perfect, bearing in mind the varied end (moral and intellectual, as well as physical) which they are designed to subserve.

They may be advantageously studied under two general heads,—1, Form; 2, Colouring,—not forgetting, of course, to view them in combination. These, again, may be subdivided into sections, *e.g.*:—

1. Fitness or utility always existing in combination with beauty; 2. Compensation; 3. Breadth and Simplicity; 4. Variety and Contrast; 5. Harmony and Gradation; 6. Expression, viewed with reference to different classes of form or modes of colouring (the theories held upon the former subject by Messrs. Alison and Garbett must, in my opinion, be accepted with considerable reservation); 7. Symmetry and Proportion; 8. The right method of Studying and imitating Nature.

Although I cannot, in a communication like the present, fully develope the theological argument based upon the facts above alluded to, it would be wrong to pass it over altogether in silence. It may be epitomised in a few sentences. That inert, senseless matter can instinctively fashion itself into forms of beauty and sublimity is a supposition at once absurd and incredible. Whenever, therefore, we meet with instances of artistic contrivance on a large scale, we at once refer them to an intelligent designer, *i.e.* the Creator himself. Then, having ascertained the benefits (physical, intellectual, and moral) which we derive from the presence of the beautiful in Nature, we proceed by an *a fortiori* argument to infer His power, wisdom, and goodness. For if such be the lesser blessings which He bestows upon His creatures, what are we to think of the greater? If the mere details of His system of moral government be so dazzlingly glorious, what must be the character of that system when viewed as a whole?

X.

THE BRICK VAULT OF ST. GEORGE'S HALL, LIVERPOOL.

SIR,—I find it reported that at the meeting of the Institute of British Architects held on the 16th ult., "Mr. Tite called the attention of the meeting to the attempt made by Mr. Rawlinson to obtain credit for having designed the ceiling of *St. George's Hall, Liverpool*." I will meet Mr. Tite on this question, with the greatest possible pleasure, for several reasons. The disappointment of Mr. Tite ought to have cooled down in sixteen years; but it appears not to have done so. How is it, however, that Mr. Tite never opened up this question before,—during the life of the late Mr. Cockerell, for instance, who was conversant with what I did and with what I claimed, as to my share in designing and in constructing the hollow brick ceiling at St. George's Hall? I did not "take office as clerk of works at St. George's Hall," as put by Mr. Tite; but, at the urgent request of Mr. Elmes, I consented to act as his representative, not only for St. George's Hall, but for the other works Mr. Elmes had at that time on hand. Mr. Moseley, Mr. Wordley, and the widow of the late Mr. Elmes are all living, as also other of Mr. Elmes's relatives. If I have, at any time, claimed for more than I had done, no form of remonstrance has reached me before this from Mr. Tite. I was in friendly communication with Mr. Cockerell throughout, and probably Mr. Tite may recollect that when he, Mr. Tite, attempted to get himself appointed architect, to complete St. George's Hall, I used all my influence to defeat him, and succeeded.

The expressed wish of the late Mr. Elmes was, that no man but the late Mr. Cockerell should touch the details of his building, St. George's Hall; and I, consequently, striving to this end, carried the appointment of Mr. Cockerell against Mr. Tite, and have reaped the malicious opposition of Mr. Tite ever since, in many ways. If Mr. Tite will ask me why the late Mr. Elmes did not wish that he, Mr. Tite, should have anything to do with St. George's Hall, I will tell him, either publicly or privately.

I will state, as briefly as possible, my connexion with St. George's Hall, and what I claim and can prove. Mr. Elmes designed the great arch ceiling, and specified, and had let the contract, to be "solid work, of patent solid compressed bricks." The late Dr. Reid, for purposes of ventilation, required 400 superficial feet of opening in the great arch.

At the request of Mr. Elmes, I went from Manchester, where I resided at the time, to his house in London, 11, Gordon-street, Gordon-square, to try and work out, in detail, the arrangements for ventilation.

It was at this time that Mr. Elmes proposed to me to carry on his works during his absence. He had been ordered abroad for the winter by his medical advisers. I declined the offer more than once, on the plea that I was not an architect, and could not, consequently, fulfil the duties. It was pressed upon me, and I have now no doubt, for the very reason that I did not claim to be an architect, and could not therefore be tempted to tamper with architectural details. The final argument, however, was as follows:—"My dear Rawlinson, if anything will give me a chance of returning with life, it will be the knowledge that I leave my works in your hands. My friend, Mr. Cockerell, has consented to attend to all matters of detail: you will, therefore, consult him on all such points, so that you need not fear any difficulty." I consented; was in regular communication with Mr. Cockerell, and did my best to hold the works together; and on the death of Mr. Elmes I handed St. George's Hall over to Mr. Cockerell, Rainhill Asylum to the Messrs. Moseley, and certain private houses for Mr. H. Hointz and Hardman Earls to Mr. Wordley.

The whole question as to the hollow brick ceiling was laid before the Institute of British Architects, I think in 1849, and will be found in the *Builder* of that period. The paper was prepared at the request of Mr. Roberts, who, I believe, knew all the parties; the late Mr. Elmes and Mr. Cockerell. The facts I stated were also known to the committee of St. George's Hall, to Mr. Picton, and to all the architects of Liverpool, and have never been before disputed. How is it, then, that Mr. Tite can only now come forward to attempt to brand my name with forgery?

I cannot get to my papers at present; but I will, at no distant date, prepare a statement of the case from letters and documents in my possession. Mr. Tite shall have an answer in full.

I may say, however, that in no respect is the late Mr. Cockerell answerable for the hollow bricks, or for the mode of construction of the ceiling. The hollow bricks were made, as designed by myself, by Mr. Clayton, of Purporley, Cheshire. The altered specification was prepared by me, and the work was executed, at day wages, by Samuel and James Holme, the contractors, under the superintendence of Mr. Hughes, the clerk of works.

The late Mr. Cockerell designed all the ornamentation, and, in fact, finished the shell of the building.

ROBERT RAWLINSON, C.E.

MANCHESTER COMPETITIONS.

SIR,—Many readers of the *Builder* are waiting to know the result of the competition for the cemetery buildings for the city of Manchester, the leading men of which have generally had the character of strict integrity in all public matters. I trust the competitors will not be disappointed. The result of another competition, just decided in the adjoining borough, certainly is rather a damper on the sanguine spirits of those who think Manchester committees infallible. Their instructions to architects were for designs for two wings to the Salford Infirmary, at a cost not exceeding 3,000*l*. The result is, they have chosen a design estimated to cost 5,000*l*., which probably means 7,000*l*. What must architects think of this, who, with faith in the words of a committee, have spent their time uselessly?

A SUBSCRIBER.

IRON GIRDERS FOR FLOORS.

SIR,—In the discussion on the construction of workmen's houses in your last number, it is stated by one of the speakers that iron girders on Fox & Barrett's principle for floors discolour the ceilings. Now, it is true that, when the ceilings are formed immediately up to the soffits of the iron joists, and especially when the plastering is hastily done, the lines of joists are sometimes visible, as they frequently are in timber floors; but counter ceilings are now almost invariably used in connexion with the system, and with these there is no contact between the joists and the ceiling; and where the work is carried out in accordance with the specification, it is impossible for the joists to show.

HENRY BARRETT.

Books Received.

Proceedings of the Liverpool Architectural and Archæological Society.

THIS publication includes the papers read in the session of 1861 and 1862, and the minutes of proceedings at the various meetings. The volume would be more attractive and likely to be read if the latter were printed separately, say at the end of it.

VARIORUM.

Beeton's new edition of the immortal "Robinson Crusoe" is full of engravings, designed by Mr. Nicholson and engraved by Mr. Sheeres, and illustrations in colour, executed by Mr. Dickes. It is nicely printed, and makes a very pretty gift-book.——The new number of *London Society* includes a paper on "May Fair a Hundred Years ago," a pleasant "Chit-Chat about Cookery and other Matters," and its usual complement of engraved illustrations, some of them very good.

Miscellanea.

WORNUM'S WALPOLE'S ANECDOTES.—In reply to Mr. Wornum's letter in our last, we have received a letter from Mr. Cunningham stating that the "anonymous note" received by Mr. Wornum in answer to his communication to the editor of the *Daily News*, was written by him, Mr. C. There cannot be any occasion to carry the matter farther.

PRESENTATION TO MR. EDWARD JOSEPH HANSOM, ARCHITECT, BRISTOL.—A testimonial has been presented to Mr. E. J. Hansom, son of Mr. C. F. Hansom, of Bristol, architect. In October last, Mr. Hansom, jun., attained his majority, and a number of gentlemen having dealings with him in connexion with his father's profession, resolved to present him with a testimonial. The sum of 100*l*. was speedily raised for the purpose. The presentation was made at a dinner, to which Mr. Hansom, sen., invited the donors and a few friends, at the Montague Hotel, Kingsdown, and over which he himself presided. The testimonial consisted of a gold watch, chain, and appendages, a set of gold studs, sleeve-links, and solitaire, in Californian gold; a Whitworth forty-guinea match rifle, and a silver salver.

BARRACKS FOR MARRIED SOLDIERS AT CHATHAM.—The drawings and plans for a building, to be erected at Chatham, for the married non-commissioned officers and privates of the line regiments in that garrison, have been approved by the Secretary of State for War. The buildings will be proceeded with immediately.

FALL OF A RAILWAY BRIDGE.—One of the girders of the London and North-Western Railway bridge, over Hyde's-lane, New Town, Birmingham, gave way lately and fell, carrying with it one of the iron parapet walls, and killing a man and horse that were passing below. Two children in the cart to which the horse was attached were thrown out and saved.

PARK FOR THE PEOPLE AT PARIS.—A new garden for the recreation of the working classes is about to be opened in one of the northern suburbs of Paris. This new garden, or, more properly, park, will be the largest within the fortifications of Paris, covering a space of 50 acres, nearly double the area of the Parc Monceaux. It is to be, like other public gardens, planted with the rarest foreign shrubs, selected from the horticultural gardens near Auteuil.

ALLEGED "SAVINGS" BY A BRICKLAYER'S LABOURER.—At an inquest held at Leamington on the body of a labourer, named Henry Reade, it was stated that Reade had been a resident of Leamington for more than forty years, during which time he had always been looked upon as a very poor man. He lived in a small room, which was searched by the police when he died, and it was then found that "out of his small wages as a labourer" he had managed to save 1,026*l.* 2s. 9d. Some people live on exceedingly little and save a large proportion of their incomes; but in this case surely there was some other source of savings than the small wages of a labourer alone.

ETHNOLOGICAL SOCIETY: ANCIENT BRONZE AND OTHER IMPLEMENTS.—At a recent meeting of this society, Mr. Mackie exhibited a collection of ancient bronze and other implements, found in a cave in Northumberland, and among them was a mould for casting bronze articles, which, we think, must be considered as proof that bronze implements were native productions, not imported, in ancient times. In the discussion that ensued, it was stated by Mr. Lubbock that there have been found in the lacustrine deposits, among relics indicating the earliest "stone period," remnants of textile fabrics, from which it appeared that the art of weaving was known in those distant ages. A paper was read on "The Aboriginal Occupation of North Tynedale and West Northumberland," contributed by the Rev. Rome Hall, which gave an account of the extensive archæological discoveries in that county, where there are remains of fortifications, constructed with massive unhewn blocks of stone, supposed to be anterior to the Roman invasion. A fact mentioned by Mr. Crawfurd tends to throw doubt on the value of the evidence of antiquity afforded by the discovery of the stone, bronze, and iron implements. He stated that in Borneo good iron implements were made at a very early date, the rich iron ore found there being readily converted into malleable iron, by fusion with charcoal and lime, without undergoing the process of casting.

THE NEW CHURCH OF ST. MICHAEL, SHOREDITCH.—The foundation-stone of the proposed new church, in Mark-street, Shoreditch, has been laid by the Bishop of London, in the presence of a very large assemblage. The church will stand immediately opposite the new model lodging-houses erected by Mr. Alderman Waterlow. It will be called the church of "St. Michael and all the Angels," and is part of a plan originated to show how much can be done in church extension by voluntary effort. 18,000*l.* have been already promised, about 7,000*l.* received, and 12,000*l.* more are required to complete the plan. In the meantime a small temporary church has been erected on a portion of the site, and has been in use for some time. As the new building will cover it in, there will be no interruption to Divine service during the time of its erection. Besides this temporary church, one of the arches of the railway near has been fitted up for Divine worship, and has been in use for some time. The new church is to be 78 feet in height, 56 feet 6 inches in width, length over 140 feet, including a deep chancel. The east window will consist of five lights, the window of many small clerestory lights. There will be a bellcote and one bell outside. The materials are banded brickwork, with Bath stone dressings. Mr. Brooke is the architect, Messrs. Sharpington & Co. the builders, and Mr. J. Cockerel clerk of the works.

THE SURVEYORSHIP TO THE BIRKENHEAD COMMISSIONERS.—It has been resolved to appoint a new surveyor, with a salary of 500*l.* a year, in the place of Mr. Mills, resigned, whose salary was only 210*l.* The whole time and attention of the surveyor will now be required. Orders were given for advertisement to issue inviting candidates to apply for the appointment.

SASSOON HOSPITAL.—Sir Bartle Frere lately laid at Poona the foundation-stone of a hospital, to be built at the expense of Mr. David Sassoon, who gives 15,000*l.* to endow it. It is to be open to people of all nations and creeds. Mr. Sassoon is a rich Bombay merchant and a native of India, who has purchased an English estate, and is now, therefore, an English landlord. He has sent his son to an English school and college.

AN ALBERT INSTITUTE FOR DUNDEE.—It has been unanimously resolved at a numerous and influential public meeting in Dundee, to erect an Albert Institute on the ground in front of the Royal Exchange there, so as to form an architectural improvement to the town while forming a memorial of the Prince Consort. A general subscription has been opened, and 10,000*l.* have already been raised. The subscriptions, however, are in the form of shares in a joint-stock company on limited liability principles, and with a capital of 20,000*l.* in 10*l.* shares. It is desired to have the Institute ready for the use of the British Association at their meeting of 1865 in Dundee.

THE GREAT DECREASE OF CITY POPULATION. The decrease is easily accounted for, by the extensive appropriation of buildings which had been formerly devoted to domestic purposes, for the use of offices, &c., connected with the various branches of commerce. In 1851, the entire population of the City of London Union was 55,932: in 1861, it was only 45,286, the decrease in ten years being 10,646. In all the parishes except the following the numbers declined:—St. James, Duke's-place (1851) 827, (1861) 851—increase, 24; St. Margaret, New Fish-street, (1851) 305, (1861) 316—increase 11; St. Martin's, Pomroy, (1851) 181, (1861) 185—increase, 4; St. Mary Mounthaw, (1851) 406, (1861) 474—increase, 68; St. Matthew, Friday-street, (1851) 164, (1861) 167—increase, 3; St. Peter, Paul's-wharf, (1851) 383, (1861) 410—increase, 27.

THE NEWCASTLE-UPON-TYNE SCHOOL OF ART: TESTIMONIAL TO MR. W. B. SCOTT.—The presentation of this testimonial has taken place in the lecture-room of the Literary and Philosophical Society, Westgate-street, Newcastle. There was a numerous assemblage, the majority being the late pupils of Mr. Scott. One of the senior students read an address to Mr. Scott from the students of the School of Art. The design was the work of a lady pupil in the school, and the composition was the work of another pupil. Mr. Scott delivered a farewell address; and a *conversazione* afterwards took place in the Natural History Society's Museum. The fund raised amounts to 170*l.* or 180*l.*; and at a meeting of the committee measures were taken to enlarge the amount, and raise it to a sufficient height to secure a picture by Mr. Scott for the town of Newcastle; the town-testimonial to be a commission to execute the painting.

THE HEALTH OF LIVERPOOL.—The mayor, says the *Albion*, with an earnest desire to co-operate in any means which might be suggested to arrest the progress of fever, attended the last meeting of the health committee, and obtained from the medical officer some explanation respecting the present sanitary condition of the town. It appears from Dr. Trench's report that in Liverpool, as in London, and probably over the whole country, there has been, thus early in the autumn, a considerable increase of typhus; and it is quite consistent with the natural history of the disease to expect rather an aggravation than a diminution of its severity during the coming winter months. This should stir up our rich men and philanthropists, our merchants and employers of labour, at once to inquire how far they can assist in solving the great social problem—*the prevention of typhus among the poor*. Typhus never can prevail in the epidemic form in face of employment for the working classes and ventilation of their dwellings. In winter, however, the ventilation of their dwellings becomes still more defective than in summer, as every crevice is stuffed up with the utmost care for the sake of warmth and for fear of draughts; and it is probably to this cause mainly, and especially from the continued closeness of their apartments during the night, that the greater prevalence of typhus in winter must be attributed.

NEW USE OF BALLOONS.—Some one suggests an economical way of lighting cities and proposes to apply it to Paris. Balloons, from the cars of which are to emanate an electric light, are to be fixed at certain stations, and hover over the city, at the proportion of one balloon to 50,000 persons. How are the balloons to be managed in gales of wind?

CHICHESTER CATHEDRAL.—The work of restoration is still going on rapidly at this cathedral. The scaffolding used in rebuilding the tower has been raised some 22 feet or 23 feet. It now stands quite clear of the roof; being 110 feet from the ground. The walls of the tower, which are about 5½ feet thick, are now some 86 feet above ground, and they are still rising at the rate of about 1 foot a week. There are between sixty and seventy men employed upon the works.

RESERVOIR PAINTING-BRUSH.—Messrs. Crowden & Garrod have patented a painting-brush, the advantages of which, in comparison with the usual kind, is that it is made of first-class bristles selected for the purpose: its shape is nearly flat, and set in thin copper binding, and firmly cemented. The most remarkable claim for the invention is, that the centre of the brush forms a small chamber for the paint, which is worked up to the flag or top of the brush by the arrangement of the bristles, which are so placed to effect this purpose that, while the brush is in use, it is working the colour to the surface and never becoming clogged.

INTENDED DESTRUCTION OF TOOTING COMMON. It is important to the public to know, says the *Standard*, that their interests and their right in this common are endangered. A vigorous effort is required to prevent Tooting Graveney being desecrated, and, in fact, absorbed by a circle of villa residences. An "Inclosure Commissioner" has been holding an inquiry on the subject in the village. A pretence is made that the present scheme does not involve an occupation of the whole tract, but is only an application for permission to build round the outskirts of it, under obligation "to keep the remainder for the public inviolate." But the lineal measurement of its outskirts is only about a mile and a half; and taking at only 60 yards the depth which would be required for each house and its private plot, together with the necessary roadways, there would remain for the benefit of the public not one-third of the present open road.

PINCHBECK PARISH, LINCOLNSHIRE.—A correspondent writes: "The large village parish of Pinchbeck, near Spalding, now presents a gratifying specimen of condition, through the benevolence and liberality of the incumbent, the Rev. W. Wayet, who, after expending 2,000*l.* in repairing and restoring the chancel of the parish church, is now employing 4,000*l.* in a similar manner on the body, besides some necessary additions, as re-hanging bells; and had previously built and endowed, almost entirely at his own expense, the little church of Pinchbeck West, with parsonage and schools; and an equally pretty school at Pinchbeck East, in a third part of the parish; and pays the salaries of the teachers at both himself. This is very satisfactory to read; as whilst, of course, this gentleman must possess adequate means, it is not all, lay or clerical, who equally remember their duty to God and the poor, and recognize the high importance and use of money as a trust."

A NEW FORCE FOR THE DESTRUCTION OF "ARMOUR PLATES."—The new armour-plated ship *Royal Oak*, one of the Channel squadron, was placed in Keyham Docks a few days since for the examination of her bottom. On the water leaving the dock the armour plates adjoining and in contact with the sheathing of Muntz's metal were found to be eaten away by galvanic action, presenting a series of corroded holes running into each other, from half an inch to five-eighths of an inch deep. Some of the plates contained no less than 188 of these holes, whilst none had less than 40. Numbers of the holes had run one into the other to the extent of five or six feet, five-eighths of an inch deep and upwards, altogether presenting one of the most remarkable appearances ever witnessed. This ship has only been about eight months in the water. The holes and corrosion appear to have occurred wherever the red lead or under-coat had been rubbed or washed off. The Lords of the Admiralty have ordered the removal of Muntz's metal from the bottom of the ship. They ought to have tried our old suggestion of building ships *for* armour plates, but without putting on their armour till about to go into action, or at least till war should be proclaimed.

British Archæological Association.—At the meeting to be held on Wednesday 9th, the following papers will be read:—Mr. E. Roberts on Brixworth Church; Mr. Saxe Bannister on Unpublished MS. Lives of Henry V.; Mr. Blashill on the Discovery of a Well and other Roman remains at St. Dunstan's-hill.

Proposed Southwark Park.—Application to Parliament is intended to be made in the next session to enable the Board of Works to provide a public park for the south-eastern districts of the metropolis, and for that purpose to purchase lands and houses in the parish of St. Mary Rotherhithe, containing about 60 acres.

St. Thomas's Hospital.—At a meeting of the governors of St. Thomas's Hospital, held on Tuesday last, a report was read from a committee appointed for the purpose, stating that they recommended the purchase of seven acres of land at Stangate, on the banks of the river Thames, as a site for the new hospital. This site—the cost of which will be 95,000*l.*—is situate on the bank of the river Thames, directly opposite the Houses of Parliament. Some memorials were presented from St. Olave's, St. John's, and St. Thomas's parishes, in favour of the Surrey Gardens site, where 17 acres might be obtained for nearly the same sum; and one of a deputation from parishes interested in the matter, said that of 96 answers which he had received from medical men on the south side of London, to whom he had written on the subject, 86 condemned Stangate as the site, 5 were favourable to it, and 5 were doubtful. It was thought that the condition of the river was not likely to be rendered so salubrious as to make this a healthy spot for a hospital. The Board, however, agreed to purchase the site in question at the price named, subject to the approval of the Court of Chancery.

Accident at Leeds.—An alarming accident occurred on Monday morning, at Leeds, from the falling in of the floor of one of the work-rooms in the manufactory of Mr. J. Barran, wholesale clothier, Alfred-street, Bear-lane, in that town. The premises are four stories in height, exclusive of attics, the lower portion of the building being used as show-rooms, cloth-rooms, &c., whilst in the top story the sewing machines, &c., are placed. The attics at the top have hitherto been used for various purposes, but the inconvenience of the slanting roof rendered them less useful than they might otherwise have been, and Mr. Barran therefore resolved to replace the slanting with a flat roof. This work was commenced a week ago, and for the convenience of the workmen the bricks and other materials were piled near the centre of the floor. In the room below, which extends the length of the premises, about forty young women, engaged at sewing-machines, were pursuing their ordinary duty about half-past eleven in the morning, when, without the slightest warning, a third of the floor above them, as well as a large quantity of bricks, fell in, completely burying the five girls who were working in that portion of the room. One of them now lies in a dying state, without the slightest hope of recovery.

An Engraver's Contract.—In the Court of Common Pleas an action for the alleged breach of a contract to engrave on steel a copy of Wallace's picture of the Death of Chatterton within the time limited by the contract, has just been decided in the case of Turner *v.* Barlow. The plaintiff, it appeared, is a publisher of prints, residing at Newcastle-on-Tyne, and the defendant is the well-known London engraver. At the Manchester Art Exhibition in 1857 Wallace's picture of the Death of Chatterton was much admired, and the picture was afterwards exhibited. In 1859 the plaintiff entered into a contract with the defendant to engrave the picture for him in twenty-one months for 462*l.*, the plaintiff contracting to let the defendant have the picture deposited with him "at intervals, as might be agreed between them, for fourteen months." The picture was engraved and finished, but the print did not meet with the extensive sale that was anticipated. From various causes, the print was not completed till 1862. The defence was mainly that the engraver had not been allowed fourteen months as stipulated. The jury found the picture to have been delivered on the 13th of May to the defendant, and that the days of receipt of the picture and sending it away ought to be excluded. The picture had been so nearly fourteen months in the engraver's possession that this was virtually a verdict for the defendant. His lordship, Justice Erle, remarked that in all his experience he never recollected such a case, depending on such a close calculation.

The Proposed Public Park at Rochdale. —Work for the Unemployed.—At a special meeting of the town council held last Saturday "to consider and determine on the purchase of the glebe lands on the easterly side of and near and adjoining to Manchester-road, for free grounds and places of public resort and recreation," it was unanimously resolved to purchase the lands named, which were offered at the price, for the larger portion of 500*l.* per acre, and for the smaller of 600*l.* per acre. The surveyor having measured it, found the quantity 20 acres, 3 roods, 895 yards—in round numbers, 21 acres of land.

Renovation of the Royal Pump-rooms, Leamington Spa.—The internal decorations of the Royal Spa Pump-rooms have been completed by Mr. C. Brothers, the local artist employed. The saline baths, the Turkish bath, and the suite of dressing, and lounging rooms, have been all decorated. The front large room is the most prominently decorated. The style of the ornamentation of the ceiling is Grecian. From the centre of the ceiling are suspended three gaseliers, supplied by Messrs. Robinson, of the Leamington Gas Works. The principles of M. Chevreul are said to have been followed in the colouring.

Sanitary Progress.—In a letter addressed to the Mayor of Lancaster, Mr. J. Grant, superintendent registrar, says of the sanitary state of the town:—"The death-rate formerly averaged about 27 in 1,000, or 1 death in 37 persons. I never knew it below 26 prior to the execution of our sewerage and waterworks. During the year ended 31st March, 1863, it was 22·7; and in that ended 30th September, 1863, 22·2, or 1 death in 45 persons. These points are lower than we have ever previously reached. If instead of the latter rates the mortality had been 27 in 1,000, it is evident that 90 more of the inhabitants of Lancaster would have been swept to the grave during the eighteen months. In the seven years 1838-44, when the birth-rate was only 33 in 1,000, the deaths under five years of age were about 40 per cent. of the total deaths. They are now about 35 per cent.,—a decrease of 12·5 per cent.——The filthy state of the Cam at Cambridge has been complained of in the local Council, and the matter has been referred to the General Purposes Committee.

Liverpool Architectural Society. — The last meeting was presided over by Mr. W. H. Weightman. Several communications were read, including one from the Secretary of the Literary and Philosophical Society, inviting co-operation in the form of a deputation to wait upon the Mayor, to request him to give his countenance and support to the proposed celebration of the tricentenary of the birthday of Shakspeare. The communication was referred to the Council. In respect of the scale of charges recommended by the Architectural Alliance, on the motion of Mr. Kilpin, seconded by Mr. Boult, it was resolved that the delegates be requested to bring before their respective societies the question of the desirability of establishing a uniform system of charging for valuation of property. It was mentioned that whilst London surveyors charged ½ per cent., or 5*l.* upon every 1,000*l.*, the charge usually made by Liverpool surveyors was only a guinea for the first 1,000*l.*, and half a guinea for each subsequent 1,000*l.* The paper for the evening, "On the Construction of Iron Roofs," was then read by Mr. J. J. Birckel.

Halifax School of Art.—A *conversazione* and exhibition of paintings, &c., in aid of the funds of this school, have been held in the New Assembly Rooms, Harrison-road, Halifax. The institution has now been in existence for upwards of five years. Hitherto its claims and importance have not been fully recognized, nor has it met with that general and liberal support to which it is entitled. In order, therefore, to clear it of a little debt, and to bring its active existence properly before the public, the committee decided upon holding a *conversazione* and an exhibition of paintings. For this purpose, several gentlemen in the town and neighbourhood lent specimens from their private collections. Mr. Ryan read a report, in which he stated, that the total number receiving instruction through the agency of this school during the half-year, was 808, showing an increase of 292 since last year. Mr. E. Crow, one of the Government art inspectors, in June last, awarded nineteen local medals for students, this being the largest number ever awarded in this school. In the examination of the first and second grade, thirty-three and fourteen students respectively were successful. The prizes were distributed after the reading of the report.

Architectural Institute of Scotland.—At the annual general meeting of the Architectural Institute of Scotland, held on the 27th ult., the Hon. Lord Jerviswoode was to open the present session by an introductory address, and a paper was to be read by Mr. David Cousin, architect, "On Algiers, and its Buildings, and the Journey thither."

Californian Colours.—A paint, or series of paints, has recently been discovered in California, which is said to yield seventy-four different tints, varying from vermilion to dove-colour. If all based on mercury, as vermilion is, however, many of them may be of little worth from the unfixed and changeable nature of most mercurial colours.

A Broadway "Store."—There is in the fashionable street of New York a "marble store," in which is carried on the largest wholesale and retail business,—it being at once the Leaf's and the Swan & Edgar's, of America. On the underground floor, below the basement, are four steam boilers of 50-horse power capacity each, which operate separately or in connexion. These are used in heating the building and in driving the engines. The space in the building heated by them is 1,819,550 cubic feet, and 38,000 lineal feet of steam-pipe are used for this purpose. The introduction of the steam works cost about twenty-five thousand dollars. There are five steam hoisting engines of 6-horse power each. There are also five elevators, each worked by one of the engines. Except the walls, the whole building has been lately reconstructed. The interior has been much changed in appearance. The work was done under the supervision of Mr. J. Kellum, the architect who furnished the design for the new city court-house.

TENDERS.

For the second contract for the rebuilding of the Hospital for Poor French Protestants at Victoria-park. Mr. R. L. Roumieu, architect. Quantities taken out by Messrs. Welsh & Atkinson, and Mr. Percy:—

Carruthers	£17,086 0 0
Ashby & Son	15,437 0 0
W. Cubitt & Co.	15,344 0 0
Mansfield & Son	14,956 0 0
Kayes & Head	14,569 0 0
Fox	14,410 0 0
I'Anson	14,145 0 0
Hill & Son	13,935 0 0
Dove, Brothers	13,891 0 0
Myers	13,840 0 0
Longmire & Burge	13,584 0 0

For building a residence at Eltham. Mr. Chester Haworth, architect. Quantities supplied:—

Freeman	£1,273 0 0
George	1,247 0 0
Mann	1,093 0 0
Kent	1,056 0 0
Ring	1,040 0 0
Langmead	985 0 0
Grey	975 0 0

For publichouse and two shops, Commercial-street, Shoreditch. Mr. Joseph Harris, architect. Quantities by Messrs. Linsden & Giffard:—

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WANTED, a good experienced PLUMBER. A constant shop for a good, steady man. A north-country or Scotch man preferred.—Apply to W. BRAITHWICK, Queen-street, Ulverston.

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WANTED, by a confidential practical Foreman, a RE-ENGAGEMENT, either as BUILDER'S SHOP, and GENERAL FOREMAN, or Foreman over a Steam Joinery, Sawing, and Moulding Mill, where system and confidence are required. First-class testimonials and reference.—Address, E. M. F. 3, Queen's-terrace, Forest-hill, S.E.

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